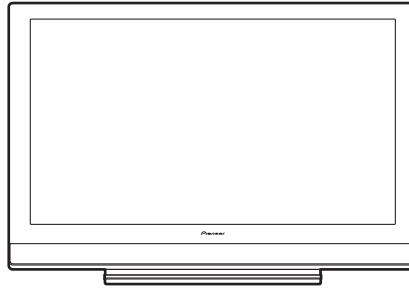


Service Manual



PDP-4280XA

ORDER NO.
ARP3441

PLASMA TELEVISION

PDP-4280XA

PDP-4280XD

PDP-428XD

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
PDP-4280XA	WYV5	AC 220 V to 240 V	
	WYVIXK5	AC 220 V to 240 V	
PDP-4280XD	WYV5	AC 220 V to 240 V	
	WYVIXK5	AC 220 V to 240 V	
PDP-428XD	WYV5	AC 220 V to 240 V	
	WYVIXK5	AC 220 V to 240 V	



For details, refer to "Important Check Points for good servicing".

SAFETY INFORMATION



This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65

NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols  (fast operating fuse) and/or  (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible  (fusible de type rapide) et/ou  (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

SAFETY PRECAUTIONS

NOTICE : Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis.

The following precautions should be observed :

1. When service is required, even though the PDP UNIT an isolation transformer should be inserted between the power line and the set in safety before any service is performed.
2. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.
3. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.
4. Always use the manufacture's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacture's. Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
5. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacture has become defective, or inadvertently defeated during servicing. Therefore, the following checks should be performed for the continued protection of the customer and servicetechnician.

6. Perform the following precautions against unwanted radiation and rise in internal temperature.

- Always return the internal wiring to the original styling.
 - Attach parts (Gasket, Ferrite Core, Ground, Rear Cover, Shield Case etc.) surely after disassembly.
7. Perform the following precautions for the PDP panel.
- When the front case is removed, make sure nothing hits the panel face, panel corner, and panel edge (so that the glass does not break).
 - Make sure that the panel vent does not break. (Check that the cover is attached.)
 - Handle the FPC connected to the panel carefully. Twisting or pulling the FPC when connecting it to the connector will cause it to peel off from the panel.
8. Pay attention to the following.
- Pay extreme caution when the front case and rear panel are removed because this may cause a high risk of disturbance to TVs and radios in the surrounding.

Leakage Current Cold Check

With the AC plug removed from an AC power source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester (DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (input/output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of 4 MΩ.

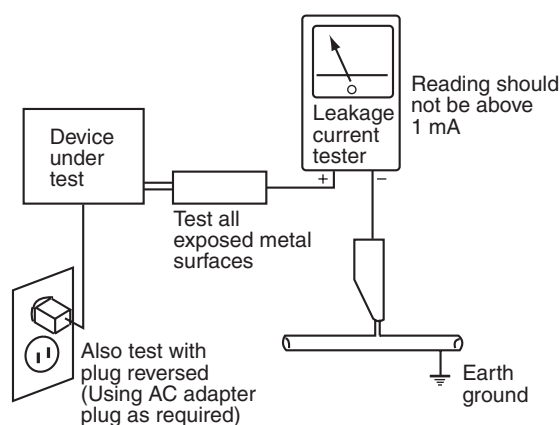
The below 4 MΩ resistor value indicate an abnormality which require corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into an AC power source (do not use an isolation transformer for this check).

Turn the AC power switch on.

Using a "Leakage Current Tester (Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet (input/output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground (water pipe, conduit, etc.). Any current measured must not exceed 1 mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in PIONEER set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification (addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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1. SERVICE PRECAUTIONS

1.1 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.
- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 °C.
Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 °C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:

- Parts numbers of lead-free solder:
GYP1006 1.0 in dia.
GYP1007 0.6 in dia.
GYP1008 0.3 in dia.

1.2 CHARGED SECTION AND HIGH VOLTAGE GENERATING POINT

■ Charged Section

The places where the commercial AC power is used without passing through the power supply transformer.

If the places are touched, there is a risk of electric shock. In addition, the measuring equipment can be damaged if it is connected to the GND of the charged section and the GND of the non-charged section while connecting the set directly to the commercial AC power supply. Therefore, be sure to connect the set via an insulated transformer and supply the current.

■ High Voltage Generating Point

The places where voltage is 100 V or more except for the charged places described above. If the places are touched, there is a risk of electric shock.

The VSUS voltage remains for several minutes after the power to the unit is turned off. These places must not be touched until about 10 minutes after the power is turned off, or it is confirmed with a tester that there is no residual VSUS voltage.

If the procedures described in “5.6.1 PANEL DRIVE-POWER ON/OFF FUNCTION” are performed before the power is turned off, the voltage will be discharged in about 30 seconds.

POWER SUPPLY Unit.....	(200 V)
42 X DRIVE Assy.....	(200 V)
42 Y DRIVE Assy.....	(-230 V to 500 V)
42 SCAN A Assy.....	(-230 V to 500 V)
42 SCAN B Assy.....	(-230 V to 500 V)

■ : Part is Charged Section.

■ : Part is the High Voltage Generating Points other than the Charged Section.

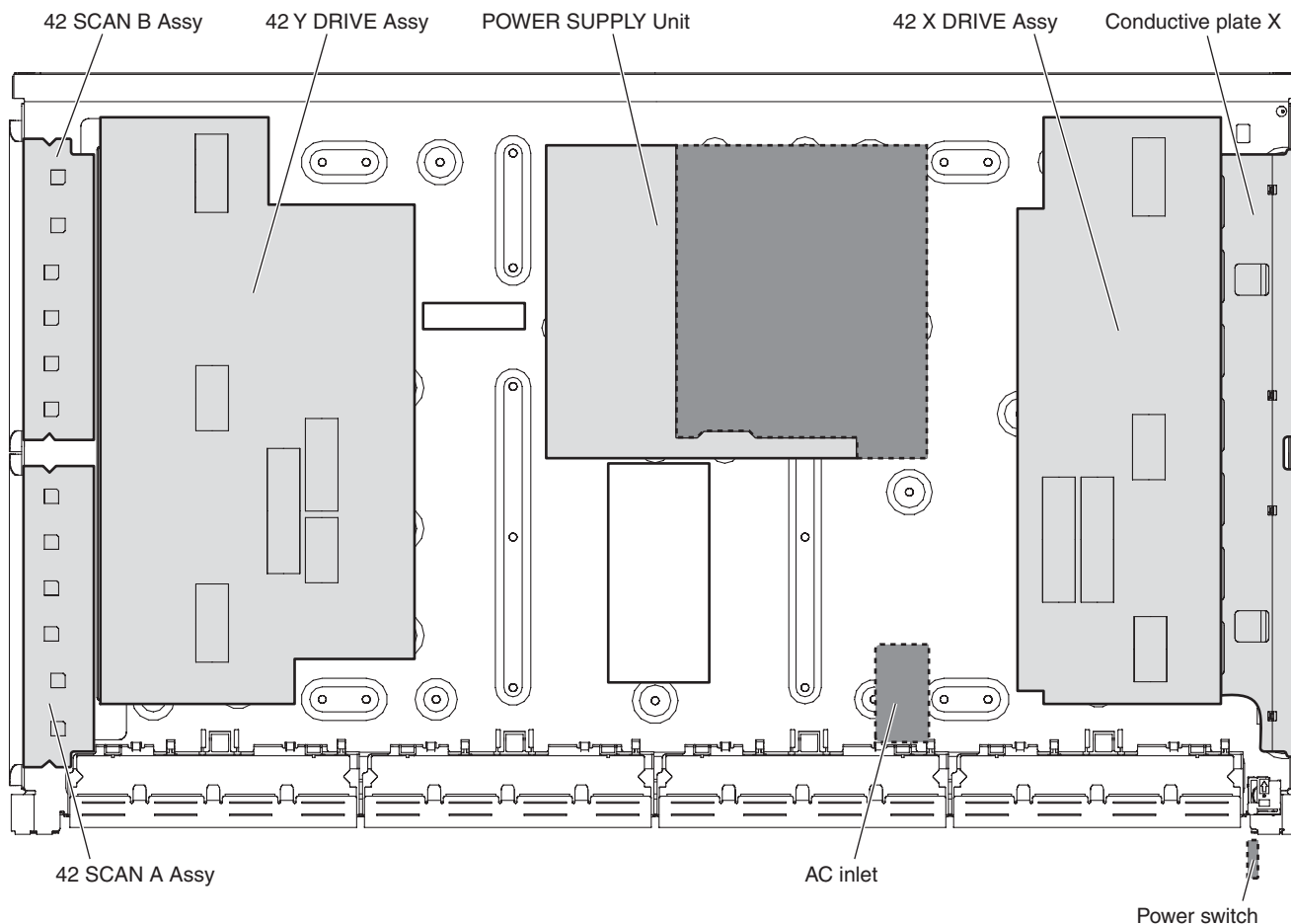
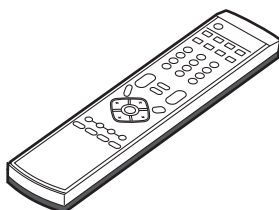


Fig. High Voltage Generating Point (Rear view)

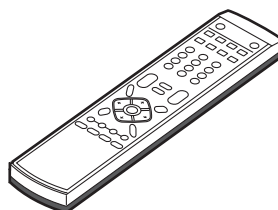
2. SPECIFICATIONS

2.1 ACCESSORIES

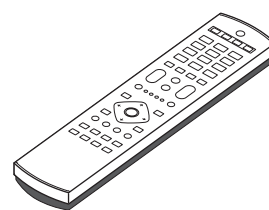
- Remote control unit (PDP-4280XA)
(AXD1553)



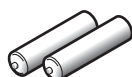
- Remote control unit (PDP-4280XD)
(AXD1552)



- Remote control unit (PDP-428XD)
(AXD1551)

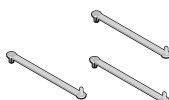


- Dry cell battery (R06, AA)

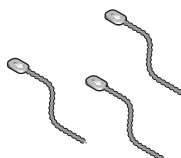


- Binder Assy
(AEC1908)

- Speed clamp: ×3



- Bead band: ×3

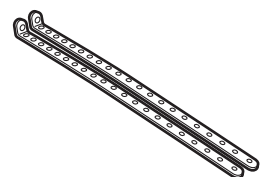


- Band assy
(AXY1192)

- Screw: ×2



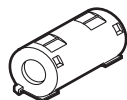
- Plastic band: ×2



PDP-4280XA, XD only

- Ferrite core (L5321)
(ATX1039)

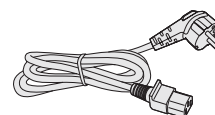
- Ferrite core



- Cable tie
(for ferrite core)



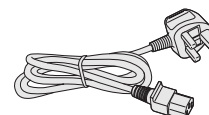
- Power cord
(ADG1214)



- Cleaning cloth (AED1285)

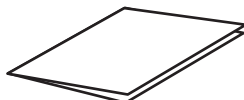


- Power cord
(ADG1223)

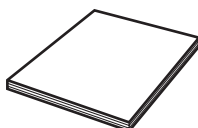


WYVIXK5 type only

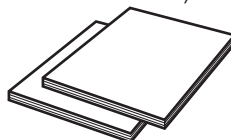
- Warranty card



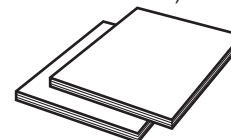
- Operating instructions (PDP-4280XA)
(ARE1478: WYV5)
(ARE1477: WYVIXK5)



- Operating instructions (PDP-4280XD)
(ARE1485: WYV5)
(ARC1602: WYV5)
(ARE1476: WYVIXK5)
(ARC1587: WYVIXK5)



- Operating instructions (PDP-428XD)
(ARE1484: WYV5)
(ARC1601: WYV5)
(ARE1475: WYVIXK5)
(ARC1586: WYVIXK5)



2.2 SPECIFICATIONS

PDP-4280XA

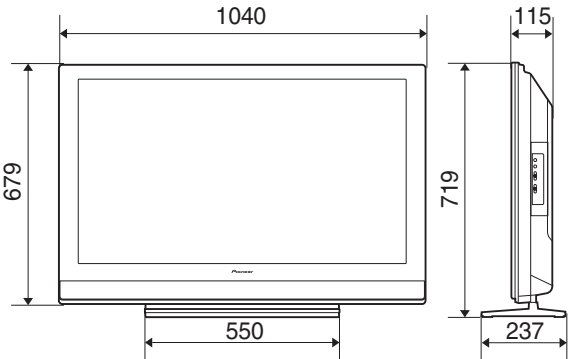
Item			42" plasma television, model: PDP-4280XA	
Number of pixels			1024 x 768 pixels	
Audio amplifier			17 W + 17 W (1 kHz, 10 %, 6 Ω)	
Speakers			Woofer: 4.8 cm x 13 cm cone type Tweeter: 2.5 cm semidome type	
Sound Effect			SRS FOCUS/SRS/SRS TruBass	
Power Requirements			220 V to 240 V AC, 50 Hz/60 Hz, 298 W (0.3 W Standby)	
Weight			Main unit: 29.5 kg (65.0lbs.) Stand: 1.7 kg (3.8 lbs.) (including bolts) Total: 31.2 kg (68.8 lbs.)	
Colour System			PAL/SECAM/NTSC 3.58/NTSC 4.43/PAL 60	
TV Function	Receiving System		B/G, D/K, I, L/L'	
	Tuner	VHF/UHF	E2–E69 ch, F2–F10 ch, I21–I69 ch, IR A–IR J ch	
		CATV	Hyper-band, S1–S41 ch	
	Auto Channel Preset		99 ch, Auto Preset, Auto Label, Auto Sort	
	STEREO		NICAM/A2	
Terminals	Rear	INPUT 1	SCART (AV in, RGB in, TV out), HDMI in*1	
		INPUT 2	SCART (AV in/out, S-VIDEO in, AV link*2), Component Video in, AUDIO in	
		INPUT 3	SCART (AV in/out, S-VIDEO in, RGB in, AV link*2), HDMI in*1	
		INPUT 4	HDMI in*1	
		CONTROL OUT	1	
		SPEAKERS		—
		Antenna	75 Ω Din Type for VHF/UHF in	
		PC INPUT	Analogue RGB in, Audio in	
	Side	AUDIO OUT	AUDIO out (Fixed)	
		INPUT 5	S-VIDEO, AV in	
PHONES		16 Ω to 32 Ω recommended		

*1 This conforms to HDMI1.3 and HDCP1.1. HDMI (High Definition Multimedia Interface) is a digital interface that handles both video and audio using a single cable. HDCP (High-bandwidth Digital Content Protection) is a technology used to protect copyrighted digital contents that use the Digital Visual Interface (DVI).

*2 Switchable from menu.

Design and specifications are subject to change without notice.

• Dimensions



Unit: mm

PDP-4280XD

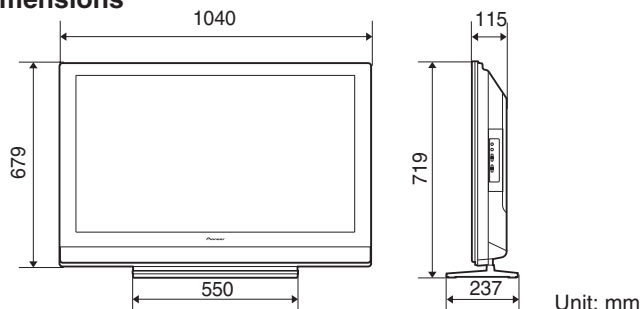
Item		42" plasma television, model: PDP-4280XD
Number of pixels		1024 x 768 pixels
Audio amplifier		17 W + 17 W (1 kHz, 10 %, 6 Ω)
Speakers		Woofer: 4.8 cm x 13 cm cone type Tweeter: 2.5 cm semidome type
Sound Effect		SRS FOCUS/SRS/SRS TruBass
Power Requirements		220 V to 240 V AC, 50 Hz/60 Hz, 299 W (0.4 W Standby)
Weight		Main unit: 29.6 kg (65.3 lbs.) Stand: 1.7 kg (3.8 lbs.) (including bolts) Total: 31.3 kg (69.0 lbs.)
Colour System	Analogue	PAL/SECAM/NTSC 3.58/NTSC 4.43/PAL 60
	Digital	PAL/SECAM
TV Function (Analogue)	Receiving System	B/G, D/K, I, L/L'
	Tuner	VHF/UHF
		E2–E69 ch, F2–F10 ch, I21–I69 ch, IR A–IR J ch
	CATV	Hyper-band, S1–S41 ch
	Auto Channel Preset	99 ch, Auto Preset, Auto Label, Auto Sort
STEREO		NICAM/A2
TV Function (Digital)	Receiving System	DVB-T(2K/8K COFDM)
	Tuner	VHF/UHF
		VHF Band III (170 MHz to 230 MHz) and UHF Band IV, V (470 MHz to 862 MHz)
	Auto Channel Preset	99 ch, Auto Preset, Auto Label, Auto Sort
STEREO		MPEG layer I/II, Dolby Digital
Terminals Rear	INPUT 1	SCART (AV in, RGB in, TV out), HDMI in ^{*1}
	INPUT 2	SCART (AV in/out, S-VIDEO in, AV link ^{*2}), Component Video in, AUDIO in
	INPUT 3	SCART (AV in/out, S-VIDEO in, RGB in, AV link ^{*2}), HDMI in ^{*1}
	INPUT 4	HDMI in ^{*1}
	CONTROL OUT	1
	SPEAKERS	–
	Antenna	75 Ω Din Type for VHF/UHF in
	PC INPUT	Analogue RGB in, Audio in
	AUDIO OUT	AUDIO out (Fixed)
	DIGITAL OUT	Digital audio output (Optical)
	COMMON INTERFACE	CA Module
	Side	INPUT 5
	PHONES	16 Ω to 32 Ω recommended

^{*1} This conforms to HDMI1.3 and HDCP1.1. HDMI (High Definition Multimedia Interface) is a digital interface that handles both video and audio using a single cable. HDCP (High-bandwidth Digital Content Protection) is a technology used to protect copyrighted digital contents that use the Digital Visual Interface (DVI).

^{*2} Switchable from menu.

Design and specifications are subject to change without notice.

• Dimensions



PDP-4280XA

A

PDP-428XD

Item			42" plasma television, model: PDP-428XD
Number of pixels			1024 x 768 pixels
Audio amplifier			17 W + 17 W (1 kHz, 10 %, 6 Ω)
Speakers			Woofer: 4.8 cm x 13 cm cone type Tweeter: 2.5 cm semidome type
Sound Effect			SRS FOCUS/SRS/SRS TruBass
Power Requirements			220 V to 240 V AC, 50 Hz/60 Hz, 299 W (0.4 W Standby)
Weight			29.6 kg (65.3 lbs.)
Colour System	Analogue	PAL/SECAM/NTSC 3.58/NTSC 4.43/PAL 60	
	Digital	PAL/SECAM	
TV Function (Analogue)	Receiving System		B/G, D/K, I, L/L'
	Tuner	VHF/UHF	E2-E69 ch, F2-F10 ch, I21-I69 ch, IR A-IR J ch
		CATV	Hyper-band, S1-S41 ch
	Auto Channel Preset		99 ch, Auto Preset, Auto Label, Auto Sort
	STEREO		NICAM/A2
TV Function (Digital)	Receiving System		DVB-T(2K/8K COFDM)
	Tuner	VHF/UHF	VHF Band III (170 MHz to 230 MHz) and UHF Band IV, V (470 MHz to 862 MHz)
		Auto Channel Preset	99 ch, Auto Preset, Auto Label, Auto Sort
	STEREO		MPEG layer I/II, Dolby Digital
Terminals	Rear	INPUT 1	SCART (AV in, RGB in, TV out), HDMI in ^{*1}
		INPUT 2	SCART (AV in/out, S-VIDEO in, AV link ^{*2}), Component Video in, AUDIO in
		INPUT 3	SCART (AV in/out, S-VIDEO in, RGB in, AV link ^{*2}), HDMI in ^{*1}
		INPUT 4	HDMI in ^{*1}
		CONTROL OUT	1
		SPEAKERS	
		Antenna	75 Ω Din Type for VHF/UHF in
		PC INPUT	Analogue RGB in, Audio in
		AUDIO OUT	AUDIO out (Fixed)
		SUB WOOFER	Variable
		DIGITAL OUT	Digital audio output (Optical)
		COMMON INTERFACE	CA Module
	Side	INPUT 5	S-VIDEO, AV in
		USB	USB in ^{*3}
		PHONES	16 Ω to 32 Ω recommended

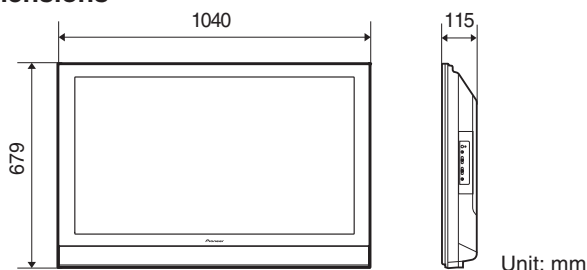
^{*1} This conforms to HDMI1.3 and HDCP1.1. HDMI (High Definition Multimedia Interface) is a digital interface that handles both video and audio using a single cable. HDCP (High-bandwidth Digital Content Protection) is a technology used to protect copyrighted digital contents that use the Digital Visual Interface (DVI).

^{*2} Switchable from menu.

^{*3} This conforms to USB 1.1 and 2.0 specifications.

Design and specifications are subject to change without notice.

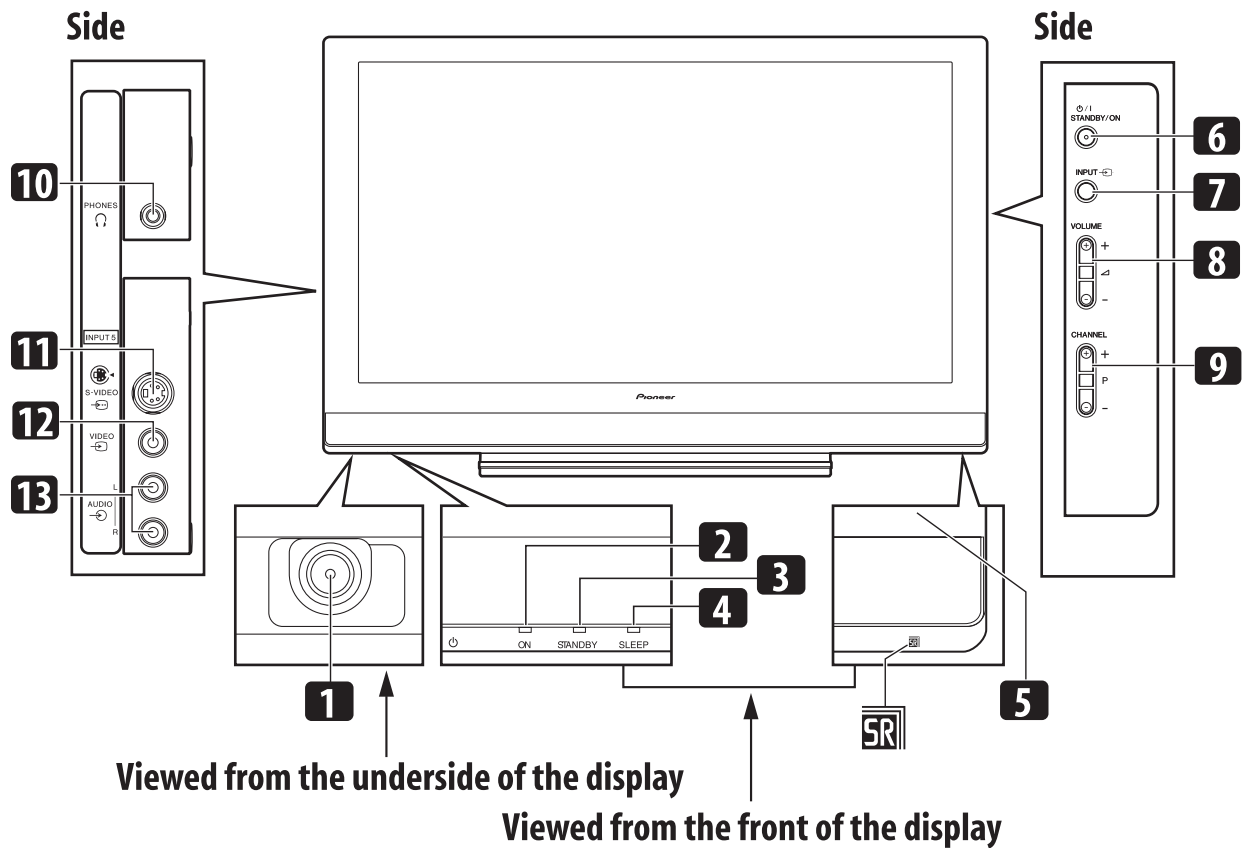
Dimensions



2.3 PANEL FACILITIES

■ PDP-4280XA

• Front Section



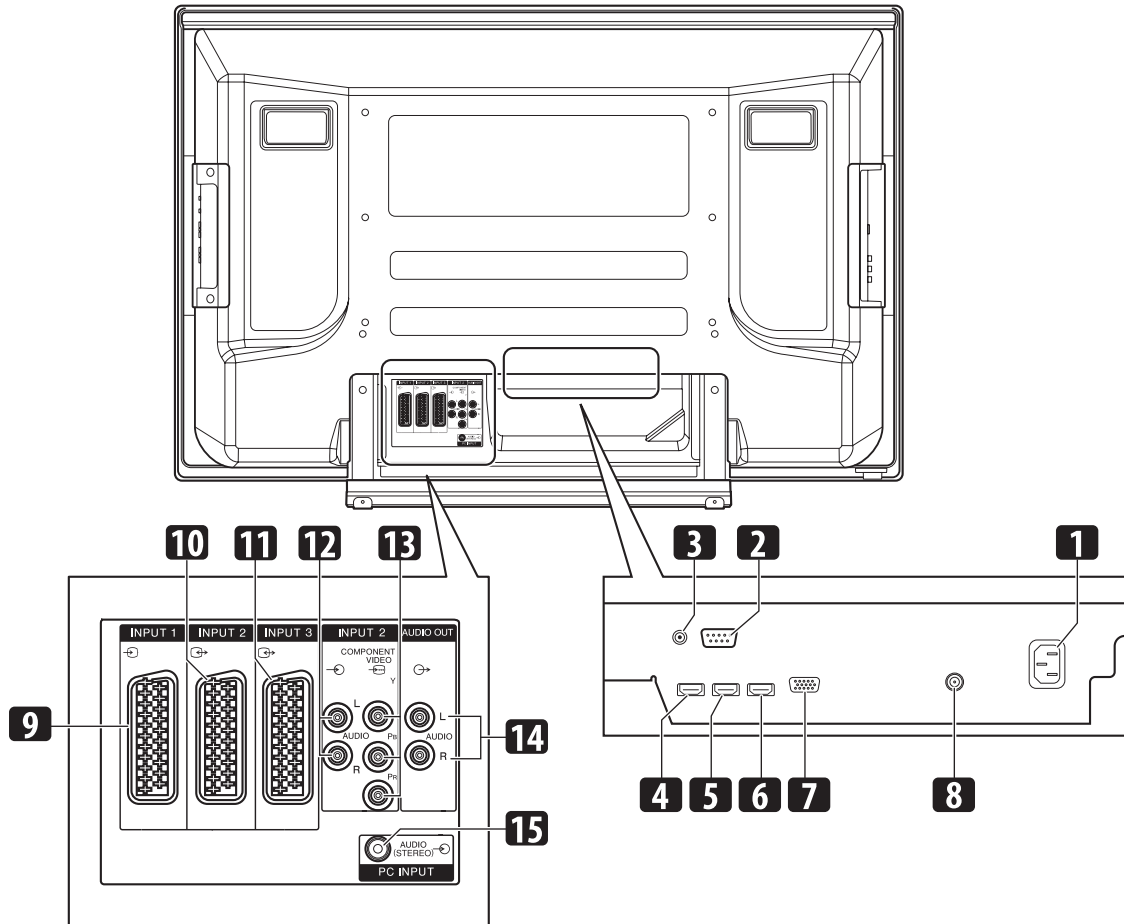
- 1 button (If the button is off, the power will not turn on even when 0 to 9 on the remote control unit or **STANDBY/ON** on the plasma television are pressed.)
- 2 POWER ON indicator
- 3 STANDBY indicator
- 4 SLEEP indicator
- 5 Remote control sensor
- 6 **STANDBY/ON** button

- 7 **INPUT** button
- 8 **VOLUME +/-** buttons
- 9 **CHANNEL +/-** buttons
- 10 PHONES output terminal
- 11 INPUT 5 terminal (S-VIDEO)
- 12 INPUT 5 terminal (VIDEO)
- 13 INPUT 5 terminals (AUDIO)

A

■ PDP-4280XA

• Rear Section



E

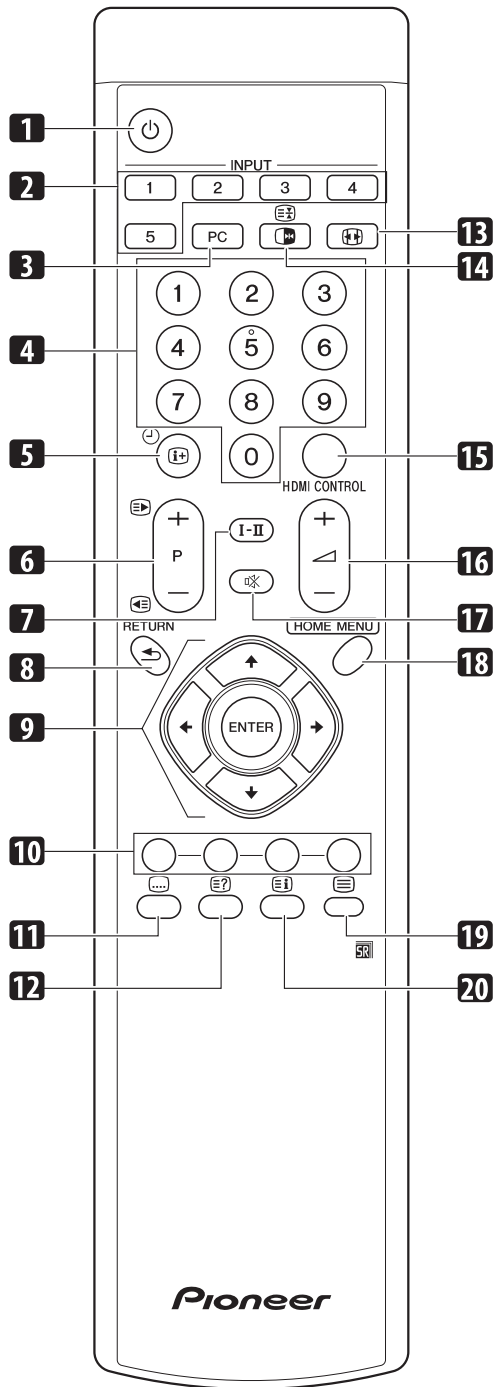
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- | | | | |
|----------|---|-----------|--|
| 1 | AC IN terminal | 9 | INPUT 1 terminal (SCART) |
| 2 | RS-232C terminal (used for factory setup) | 10 | INPUT 2 terminal (SCART) |
| 3 | CONTROL OUT terminal (supports SR+) | 11 | INPUT 3 terminal (SCART) |
| 4 | INPUT 1 terminal (HDMI) | 12 | INPUT 2 terminals (Audio) |
| 5 | INPUT 3 terminal (HDMI) | 13 | INPUT 2 terminals (COMPONENT VIDEO: Y, P _B , P _R) |
| 6 | INPUT 4 terminal (HDMI) | 14 | AUDIO OUT terminals |
| 7 | PC INPUT terminal (Analogue RGB) | 15 | PC INPUT terminal (Audio) |
| 8 | ANT (Antenna) input terminal | | |

■ PDP-4280XA

• Remote Control Unit

Point the remote control at the plasma television to operate.



- 1 Turns on the power to the plasma television or places it into the standby mode.
- 2 **INPUT**
Selects an input source of the plasma television. ("INPUT 1", "INPUT 2", "INPUT 3", "INPUT 4", "INPUT 5")

- 3 **PC**
Selects the PC terminal as an input source.
- 4 **0 to 9**
TV/External input mode: Selects a channel.
Teletext mode: Selects a page.
Turns the power on when the STANDBY indicator lights red.
- 5 Displays the channel information.
- 6 **P+/P-**
TV/External input mode: Selects a channel.
 Teletext mode: Selects a page.
- 7 **I-II**
Sets the sound multiplex mode.
- 8 **RETURN**
Restores the previous menu screen.
- 9 Selects a desired item on the setting screen.
ENTER
Executes a command.
- 10 **Colour (RED/GREEN/YELLOW/BLUE)**
Teletext mode: Selects a page.
- 11 Jumps to Teletext subtitle page.
- 12 Displays hidden characters.
- 13 Selects the screen size.
- 14 TV/External input mode: Freezes a frame from a moving image. Press again to cancel the function.
 Teletext mode: Stops updating Teletext pages. Press again to release the hold mode.
- 15 **HDMI CONTROL**
Displays the HDMI Control menu.
- 16 Sets the volume.
- 17 Mutes the sound.
- 18 **HOME MENU**
Displays the HOME MENU screen.
- 19 Selects the Teletext mode (all TV image, all TEXT image, TV/TEXT image).
- 20 Displays an Index page for the CEEFAX/FLOF format. Displays a TOP Over View page for the TOP format.

A

■ PDP-4280XD

• Front Section

B

C

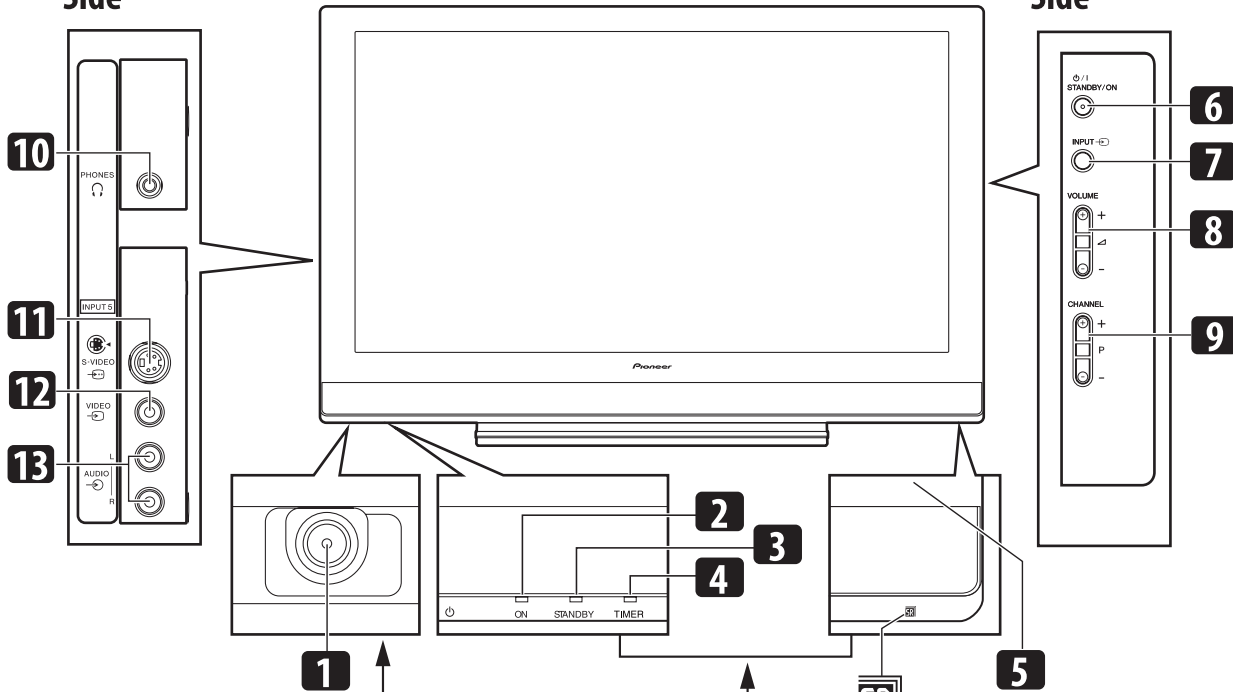
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Side

Side



Viewed from the underside of the display

Viewed from the front of the display

1 button (If the button is off, the power will not turn on even when 0 to 9 on the remote control unit or **STANDBY/ON** on the plasma television are pressed.)

2 POWER ON indicator

3 STANDBY indicator

4 **TIMER** indicator

• The **TIMER** indicator lights up when one or more DTV programmes are preset for watching or recording.

5 Remote control sensor

6 **STANDBY/ON** button

7 **INPUT** button

8 **VOLUME +/-** buttons

9 **CHANNEL +/-** buttons

10 PHONES output terminal

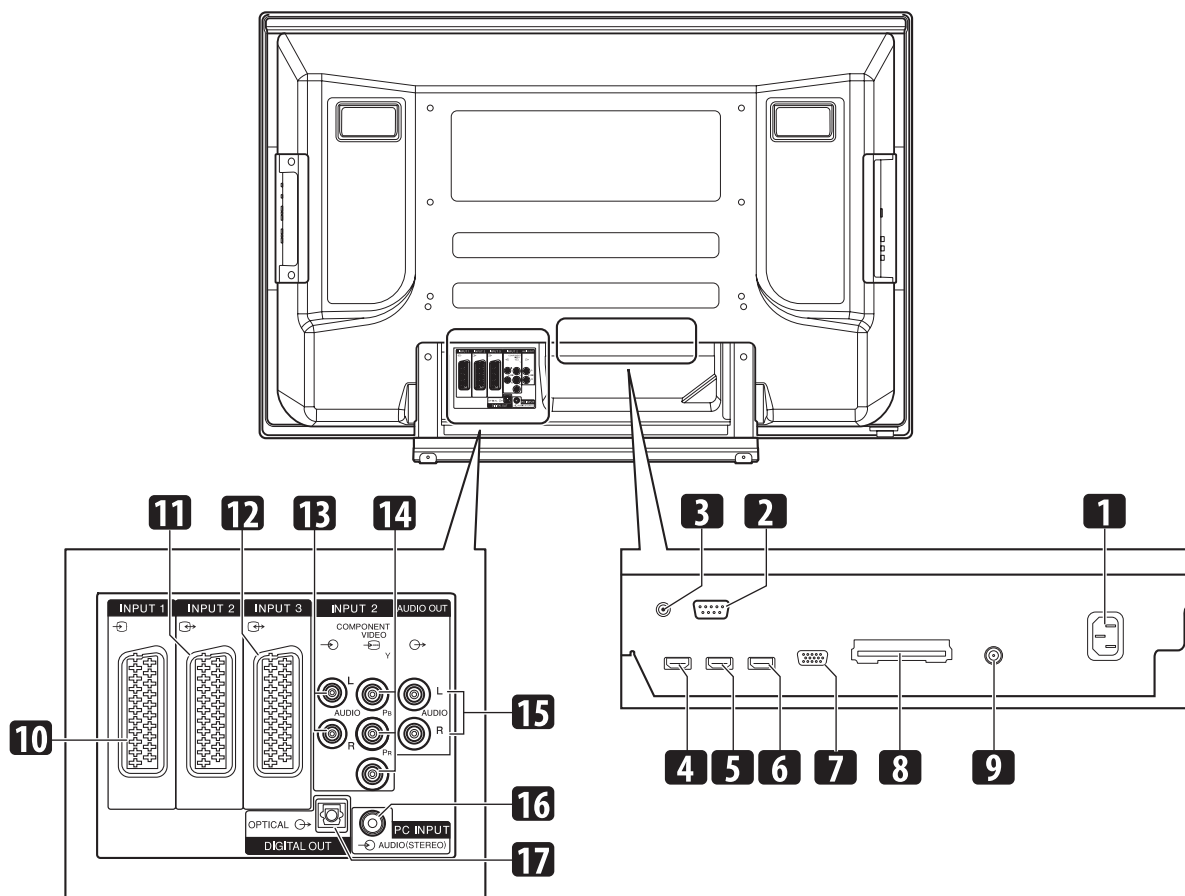
11 INPUT 5 terminal (S-VIDEO)

12 INPUT 5 terminal (VIDEO)

13 INPUT 5 terminals (AUDIO)

■ PDP-4280XD

• Rear Section



- 1 AC IN terminal
- 2 RS-232C terminal (used for factory setup)
- 3 CONTROL OUT terminal (supports **SR+**)
- 4 INPUT 1 terminal (HDMI)
- 5 INPUT 3 terminal (HDMI)
- 6 INPUT 4 terminal (HDMI)
- 7 PC INPUT terminal (Analogue RGB)
- 8 COMMON INTERFACE slot
- 9 ANT (Antenna) input terminal
- Power can be supplied through this terminal

- 10 INPUT 1 terminal (SCART)
- 11 INPUT 2 terminal (SCART)
- 12 INPUT 3 terminal (SCART)
- 13 INPUT 2 terminals (Audio)
- 14 INPUT 2 terminals (COMPONENT VIDEO: Y, P_B, P_R)
- 15 AUDIO OUT terminals
- 16 PC INPUT terminal (Audio)
- 17 DIGITAL OUT terminal (OPTICAL)

A

■ PDP-4280XD

• Remote Control Unit

Point the remote control at the plasma television to operate.

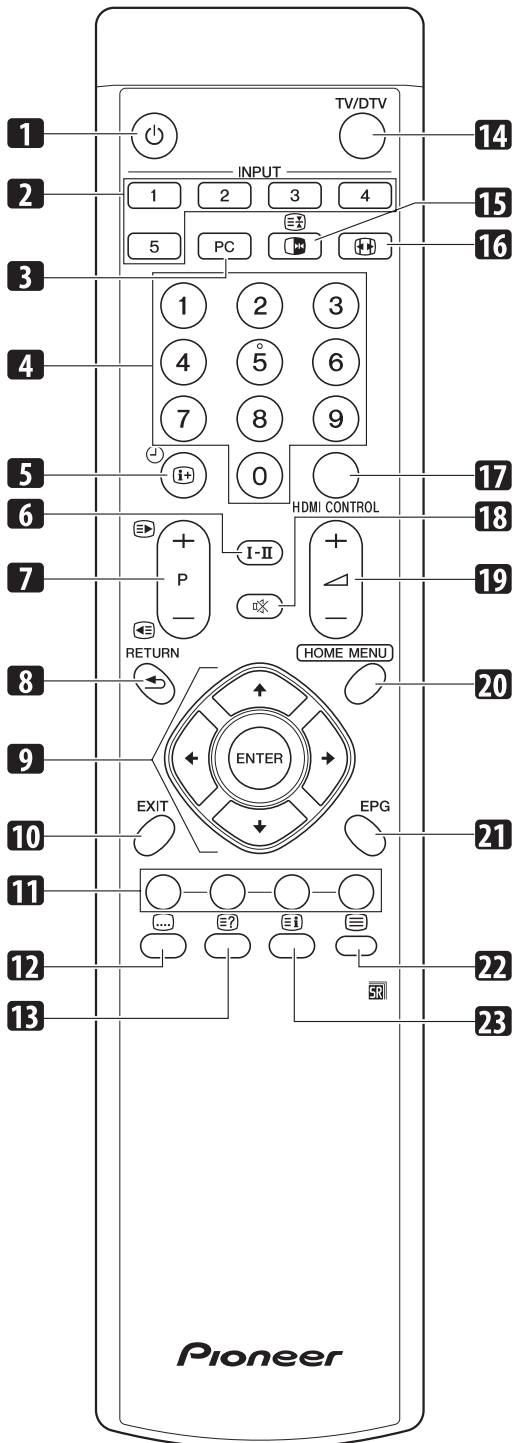
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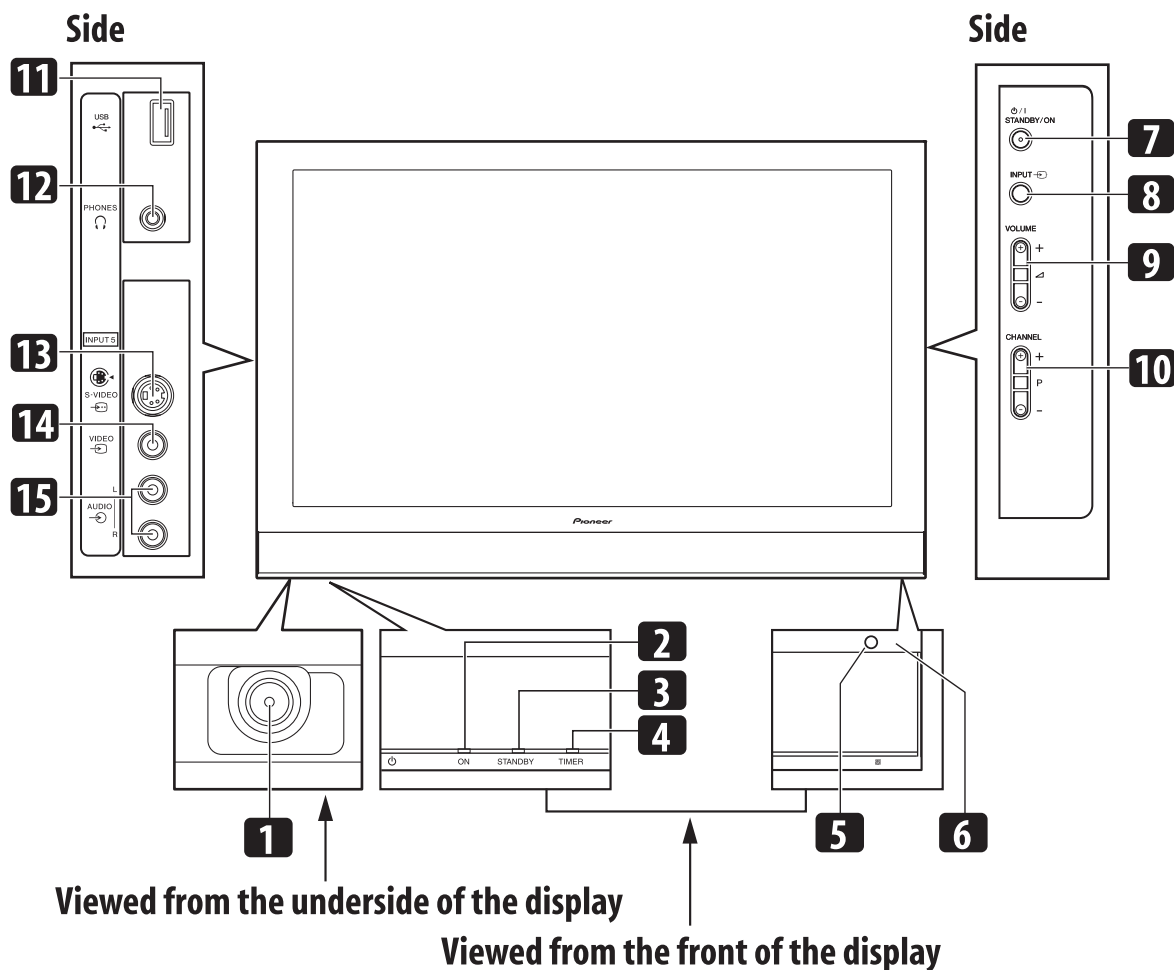
- 1 **⏻**: Turns on the power to the plasma television or places it into the standby mode.
- 2 **INPUT**: Selects an input source of the plasma television. ("INPUT 1", "INPUT 2", "INPUT 3", "INPUT 4", "INPUT 5")
- 3 **PC**: Selects the PC terminal as an input source.
- 4 **0 - 9**: TV/External input mode: Selects a channel.
Teletext mode: Selects a page.
Turns the power on when the STANDBY indicator lights red.
- 5 **i+** **i-**: Displays the channel information.
Displays the banner information in DTV input mode.
- 6 **I-II**: Sets the sound multiplex mode.
- 7 **P+/P-**: TV/External input mode: Selects a channel.
⇒/⇐: Teletext mode: Selects a page.
- 8 **↶ RETURN**: Restores the previous menu screen.
- 9 **↑/↓/←/→**: Selects a desired item on the setting screen.
ENTER: Executes a command.
- 10 **EXIT**: Returns to the normal screen in one step.
- 11 **Colour (RED/GREEN/YELLOW/BLUE)**:
Teletext mode: Selects a page.
- 12 **⋮**: Jumps to Teletext subtitle page.
Turns subtitle on and off in DTV input mode depending on the broadcast.
- 13 **Ⓔ?**: Displays hidden characters.
- 14 **TV/DTV**: Switches between the TV and DTV input modes.
- 15 **⏸**: TV/External input mode: Freezes a frame from a moving image. Press again to cancel the function.
Ⓔ: Teletext mode: Stops updating Teletext pages. Press again to release the hold mode.
- 16 **⏏**: Selects the screen size.
- 17 **HDMI CONTROL**: Displays the HDMI Control menu.
- 18 **M**: Mutes the sound.
- 19 **△ + / △ -**: Sets the volume.
- 20 **HOME MENU**: Displays the HOME MENU screen.
- 21 **EPG**: Displays the Electronic Programme Guide in DTV input mode.
- 22 **⏏**: Selects the Teletext mode (all TV image, all TEXT image, TV/TEXT image).
- 23 **Ⓔ**: Displays an Index page for the CEEFAX/FLOF format.
Displays a TOP Over View page for the TOP format.

Note

- When using the remote control unit, point it at the plasma television.

■ PDP-428XD

• Front Section



- 1 button (If the button is off, the power will not turn on even when 0 to 9 on the remote control unit or **STANDBY/ON** on the plasma television are pressed.)
- 2 POWER ON indicator
- 3 STANDBY indicator
- 4 TIMER indicator
 - The **TIMER** indicator lights up when one or more DTV programmes are preset for watching or recording.
- 5 Room Light Sensor
- 6 Remote control sensor
- 7 **STANDBY/ON** button

- 8 **INPUT** button
- 9 **VOLUME +/-** buttons
- 10 **CHANNEL +/-** buttons
- 11 USB port
- 12 PHONES output terminal
- 13 INPUT 5 terminal (S-VIDEO)
- 14 INPUT 5 terminal (VIDEO)
- 15 INPUT 5 terminals (AUDIO)

A

■ PDP-428XD

• Rear Section

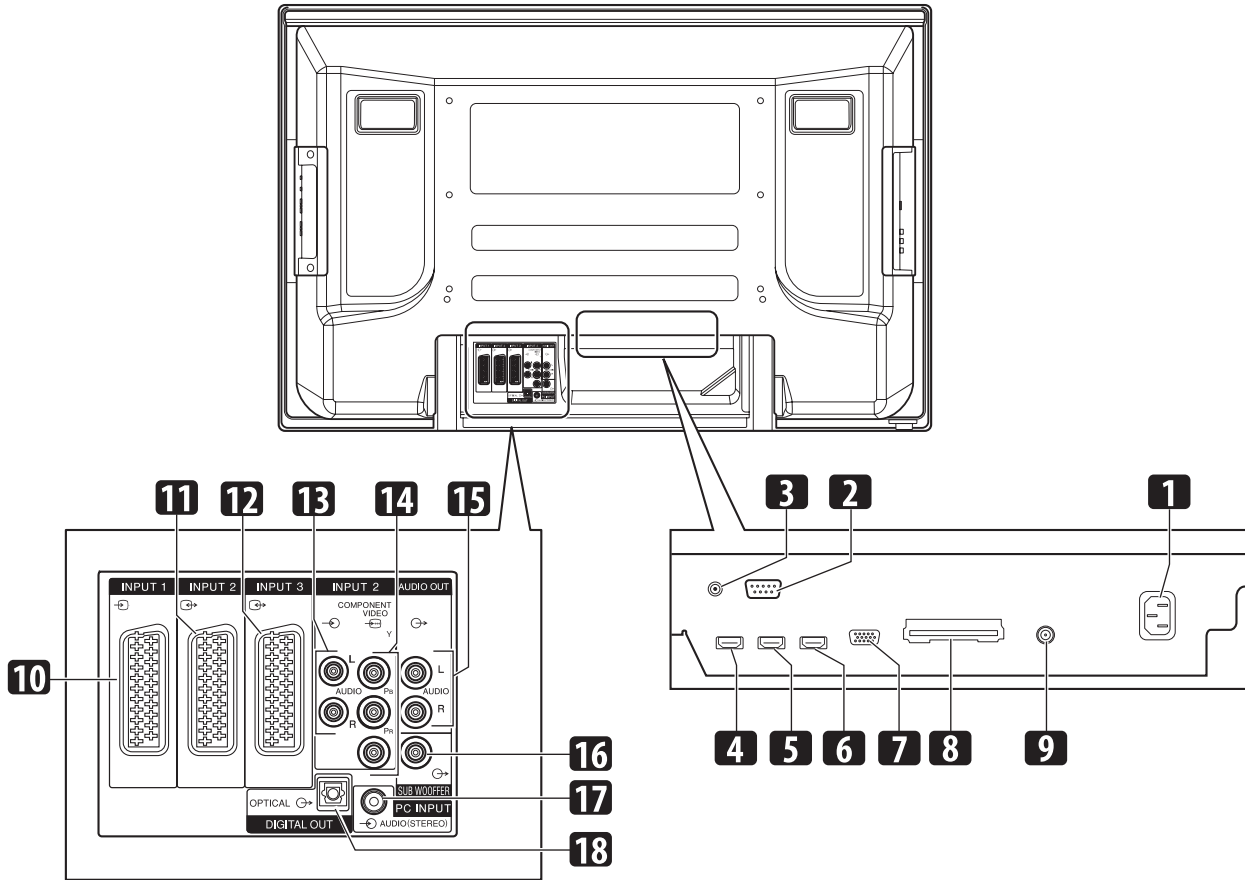
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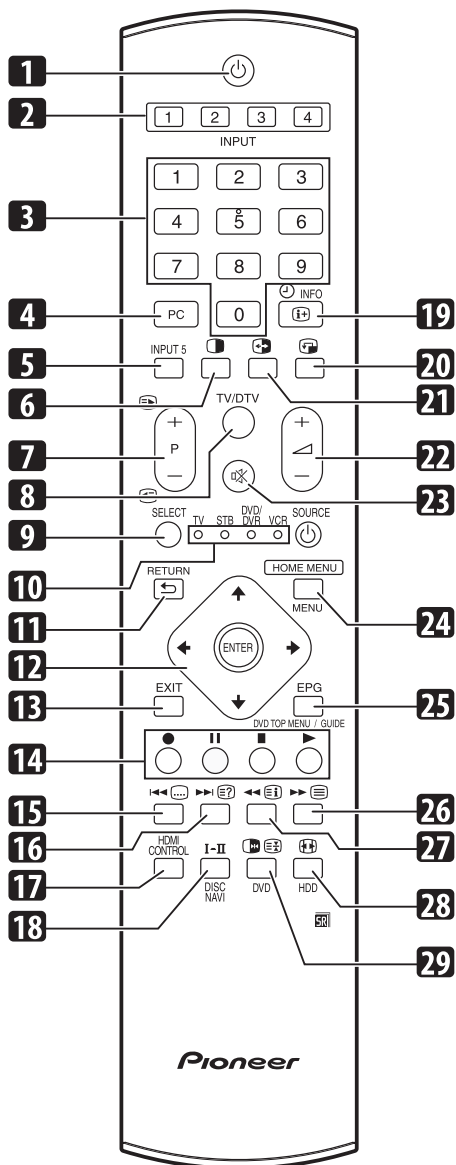


- | | | | |
|---|---|----|--|
| 1 | AC IN terminal | 10 | INPUT 1 terminal (SCART) |
| 2 | RS-232C terminal (used for factory setup) | 11 | INPUT 2 terminal (SCART) |
| 3 | CONTROL OUT terminal (supports SR+) | 12 | INPUT 3 terminal (SCART) |
| 4 | INPUT 1 terminal (HDMI) | 13 | INPUT 2 terminals (Audio) |
| 5 | INPUT 3 terminal (HDMI) | 14 | INPUT 2 terminals (COMPONENT VIDEO: Y, P _B , P _R) |
| 6 | INPUT 4 terminal (HDMI) | 15 | AUDIO OUT terminals |
| 7 | PC INPUT terminal (Analogue RGB) | 16 | SUBWOOFER output terminal |
| 8 | COMMON INTERFACE slot | 17 | PC INPUT terminal (Audio) |
| 9 | ANT (Antenna) input terminal | 18 | DIGITAL OUT terminal (OPTICAL) |
| | • For a CA Module with a smart card | | |
| | • Power can be supplied through this terminal | | |

■ PDP-428XD

• Remote Control Unit

This section describes the functions of the buttons available when the TV mode has been selected by using the **SELECT** button.



- 1 : Turns on the power to the plasma television or places it into the standby mode.
- 2 **INPUT**: Selects an input source of the plasma television. ("INPUT 1", "INPUT 2", "INPUT 3", "INPUT 4")
- 3 **0 - 9**: TV/External input mode: Selects a channel.
Teletext mode: Selects a page.
Turns the power on when the **STANDBY** indicator lights red.
- 4 **PC**: Selects the PC terminal as an input source.
- 5 **INPUT 5**: Selects INPUT 5 as the input source of the plasma television.

- 6 : Switches the screen mode among 2-screen, picture-in-picture, and single-screen.
- 7 **P+/P-**: TV/External input mode: Selects a channel.
: Teletext mode: Selects a page.
- 8 **TV/DTV**: Switches between the TV and DTV input modes.
- 9 **SELECT**: Switches the selection among TV, STB, DVD/DVR, and VCR, so that you can control other connected equipment, using the supplied remote control unit.
- 10 **TV, STB, DVD/DVR, VCR**: These indicators show the current selection and status when you control other connected equipment, using the supplied remote control unit.
- 11 **RETURN**: Restores the previous menu screen.
- 12 : Selects a desired item on the setting screen.
ENTER: Executes a command.
- 13 **EXIT**: Returns to the normal screen in one step.
- 14 **Colour (RED/GREEN/YELLOW/BLUE)**:
Teletext mode: Selects a page.
- 15 : Jumps to Teletext subtitle page.
Turns subtitle on and off in DTV input mode depending on the broadcast.
- 16 : Displays hidden characters.
- 17 **HDMI CONTROL**: Displays the HDMI Control menu.
- 18 **I-II**: Sets the sound multiplex mode.
- 19 **INFO**: Displays the channel information.
Displays the banner information in DTV input mode.
- 20 : Moves the location of the small screen when in the picture-in-picture mode.
- 21 : Switches between the two screens when in the 2-screen or picture-in-picture mode.
- 22 **+/-**: Sets the volume.
- 23 : Mutes the sound.
- 24 **HOME MENU**: Displays the HOME MENU screen.
- 25 **EPG**: Displays the Electronic Programme Guide in DTV input mode.
- 26 : Selects the Teletext mode (all TV image, all TEXT image, TV/TEXT image).
- 27 : Displays an Index page for the CEEFAX/FLOF format.
Displays a TOP Over View page for the TOP format.
- 28 : Selects the screen size.
- 29 : TV/External input mode: Freezes a frame from a moving image. Press again to cancel the function.
: Teletext mode: Stops updating Teletext pages. Press again to release the hold mode.

Note

- When using the remote control unit, point it at the plasma television.

3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

A Items to be checked after repair (PDP)

To ensure the quality of the product after repair, check the recommended items shown below:

No.	Procedures	Item to be checked
1	Check if all the symptoms pointed out by the customer have been addressed.	The symptoms in question must not be reproduced.
2	Connect the peripheral equipment.	Connect all external peripheral equipment as originally connected and check if the connections are correct.
3	Check the video and audio.	Tune in to the stations that the customer would normally receive and check if video and audio are normal.
4	Check the buttons and controls.	Use the buttons and controls on the remote control unit and main unit and check if they operate properly.
5	Check the cabinet.	Check for any scratches or dirt that have been made or attached on the cabinet after receiving the product for repair.

See the table below for the items to be checked regarding video and audio:

Item to be checked regarding video	Item to be checked regarding audio
Block noise	Distortion
Horizontal noise	Noise
Dot noise	Volume too low
Disturbed image (video jumpiness)	Volume too high
Too dark	Volume fluctuating
Too bright	Sound interrupted
Mottled color	

Quick Reference upon Service Visit ①

Notes, PD/SD diagnosis, and methods for various settings

Notes when visiting for service

1. Notes when disassembling/reassembling

① Rear case

When reassembling the rear case, the screws must be tightened in a specific order. Be careful not to tighten them in the wrong order forcibly. For details, see "Rear Case" in "7. DISASSEMBLY".

② Attaching screws for the HDMI connector

When attaching the HDMI connector after replacing the Main Assy, secure the HDMI connector manually with a screwdriver, but not with an electric screwdriver. If you tighten the screws too tightly with an electric screwdriver, the screw heads may be damaged, in which case the screws cannot be untightened/tightened any more.

2. On parts replacement

① How to discharge before replacing the Assys

A charge of significant voltage remains in the Plasma Panel even after the power is turned off. Safely discharge the panel before replacement of parts, in either manner indicated below:

A: Let the panel sit at least for 3 minutes after the power is turned off.
B: Turn the Large Signal System off before the power is turned off then, after 1 minute, turn the power off.

For details, see "5.6.1 PANEL DRIVE-POWER ON/OFF FUNCTION".

② On the settings after replacement of the Assys

Some boards need settings made after replacement of the Assys. For details, see "8. EACH SETTING AND ADJUSTMENT".

3. On various settings

① Setting in Factory mode

After a Mask indication into the panel is performed, be sure to set the Mask setting to "OFF" then exit Factory mode.

PD/SD			LED Display Information	
Item		No. of LEDs flashing		
		Red	Blue	
Panel section	SQ_LSI		Blue 1	① Rewriting software 
	Communication with the module IIC		Blue 2	② PD (2-15) 
	DIGITAL-RST2		Blue 3	③ SD (1-15) 
	Panel high temperature		Blue 4	④ No backup 
MTB section	Audio/ Short-circuit SP terminal		Blue 5	This indication does not display all LED patterns. For details, please refer to 5.1.1 LED DISPLAY INFORMATION.
	Communication with the Module UCOM		Blue 6	
	Main 3-wire serial communication		Blue 7	
	Main IIC communication		Blue 8	
	Communication with the Main UCOM		Blue 9	
	FAN		Blue 10	
	Unit high temperature		Blue 11	
	Digital Tuner communication		Blue 12	
	MTB-RST2/RST4		Blue 13	
	Main EEPROM		Blue 15	
POWER		Red 2		
SCAN		Red 3		
SCN-5V		Red 4		
Y-DRIVE		Red 5		
Y-DCDC		Red 6		
Y-SUS		Red 7		
ADRS		Red 8		
X-DRIVE		Red 9		
X-DCDC		Red 10		
X-SUS		Red 11		
DIG-DCDC		Red 12		
UNKNOWN		Red 15		

How to locate several items on the Factory menu

{ } : Item on the Factory menu
[] : Key on the remote control unit
" " : Screen indication

1. Confirmation of accumulated power-on time and power-on count

Select {INFORMATION} then {HOUR METER}.
(After entering Factory mode, press [↓] five times.)

2. Confirmation of the Power-down and Shutdown histories

① Panel system

PD: Select {PANEL FACTORY} then {POWER DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] three times.)

SD: Select {PANEL FACTORY} then {SHUT DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] four times.)

② MTB section

Select {INFORMATION} then {MAIN NG}.
(After entering Factory mode, press [↓] three times.)

3. How to display the Mask indication

① Mask indication in the panel side

1. Select {PANEL FACTORY} then {RASTER MASK SETUP}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] 8 times.)
2. Press [ENTER/SET], then select a Mask indication, using [↓] or [↑].

Adjustments and Settings after replacement of the Assys (Procedures in Factory mode)

1. Digital Video Assy: Transfer of backup data

- ① Select {PANEL FACTORY}, {ETC}, then {BACKUP DATA}. (After entering Factory mode, press [MUTING] once, press [ENTER/SET], press [↓] seven times, then press [ENTER/SET].)
- ② Select {TRANSFER}, using [→], then hold [ENTER/SET] pressed for at least 5 seconds.
- ③ After transfer of backup data is completed, {ETC} is automatically selected, and the LED on the front panel returns to normal lighting.

2. MAIN Assy: Execution of FINAL SETUP.

- ① Select {INITIALIZE} then {FINAL SETUP}, then press [ENTER/SET]. (After entering Factory mode, press [MUTING] three times, then press [↓] four times.)
- ② Select "YES", using [→]. Then hold [ENTER/SET] pressed for at least 5 seconds.
- ③ After "FINAL SETUP IS COMPLETE" is displayed on the screen, turn the POWER switch of the main unit off.

3. POWER SUPPLY Unit: Clearance of the accumulated power-on count and maximum temperature value

- ① Select {PANEL FACTORY}, {ETC}, then {P COUNT INFO}. (After entering Factory mode, press [MUTING] once, press [ENTER/SET], press [↓] seven times, press [ENTER/SET], then press [↓] six times.)
- ② Press [→] to select "CLEAR". Hold [ENTER/SET] pressed for at least 5 seconds. After clearance is completed, "ETC" is automatically selected. Clear the maximum temperature value (MAX TEMP) in the same manner.

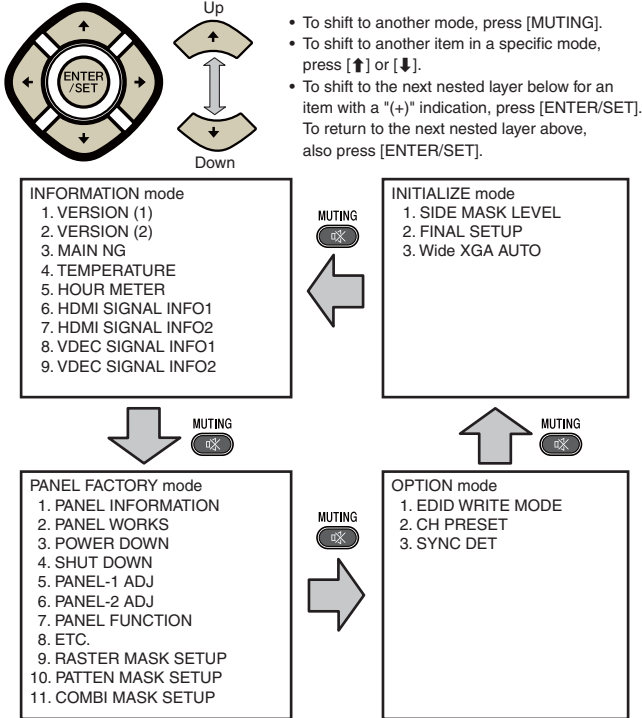
4. Other Assys: Clearance of the maximum temperature value

- ① Select {PANEL FACTORY}, {ETC}, then {MAX TEMP}. (After entering Factory mode, press [MUTING] once, press [ENTER/SET], press [↓] seven times, press [ENTER/SET], then press [↓] seven times.)
- ② Press [→] to select "CLEAR". Hold [ENTER/SET] pressed for at least 5 seconds. After clearance is completed, "ETC" is automatically selected.

Quick Reference upon Service Visit ②

Mode transition and structure of layers in Service Factory mode

Mode transition in Service Factory mode



Structure of Layers in Service Factory Mode

INFORMATION mode	
1. VERSION (1)	The software versions for each microcomputer
2. VERSION (2)	The Flash memory versions for each device
3. MAIN NG	The shutdown message ID/event times (Going Clear mode by [ENTER/SET] key)
3-1. CLEAR	Select Yes by [→] key, → pressing and hold [ENTER/SET] key
4. TEMPERATURE	The temperature/FAN rotating status/Room light sensor
5. HOUR METER	The HOUR METER/P-COUNT information
6. HDMI SIGNAL INFO 1	The information of HDMI information files
7. HDMI SIGNAL INFO 2	The information of HDMI information files
8. VDEC SIGNAL INFO 1	The signal information of VDEC
9. VDEC SIGNAL INFO 2	The signal information of VDEC
PANEL FACTORY mode	Refer to [PANEL FACTORY MODE]
OPTION mode	
1. EDID WRITE MODE	For factory use
2. CH PRESET	For production line use
3. SYNC DET	For technical analysis
INITIALIZE mode	
1. SIDE MASK LEVEL	For factory use
1-1. SIDE MASK LEVEL	
2. FINAL SETUP	Set to Factory default settings (it should perform after replacing a MAIN Assy)
2-1. DATA RESET	For technical analysis
3. Wide XGA AUTO	

Structure of Layers in Panel Factory Mode 1

1. PANEL INFORMATION	Version indication of the panel
2. PANEL WORKS	Indications of the accumulated power-on time, pulse-meter count, and power-on count of the panel
3. POWER DOWN	Indication of the Power-down history
4. SHUT DOWN	Indication of the Shutdown history
5. PANEL-1 ADJ (+)	
1. VOL SUS	Settings required after replacement of the panel
2. VOL OFFSET	
.....	
8. VOL YNOFS4	
9. RESET1ST_KSB	Modification not required because these items are basically for factory presetting
10. RESET2ND_KSB	
.....	
23. YSTL_FMR_HZ	
24. SUS FREQ	For AM noise prevention (Depending on the mode, brightness of the screen changes.) For confirmation of the result of the setting change, the unit must be turned off then back on again.
6. PANEL-2 ADJ (+)	
1. R-HIGH	Parameters for the WB adjustment of the panel, which are required during adjustment after panel replacement
2. G-HIGH	
3. B-HIGH	
4. R-LOW	
5. G-LOW	
6. B-LOW	
7. ABL	Setting of the power consumption. A setting table is available for each vertical signal.

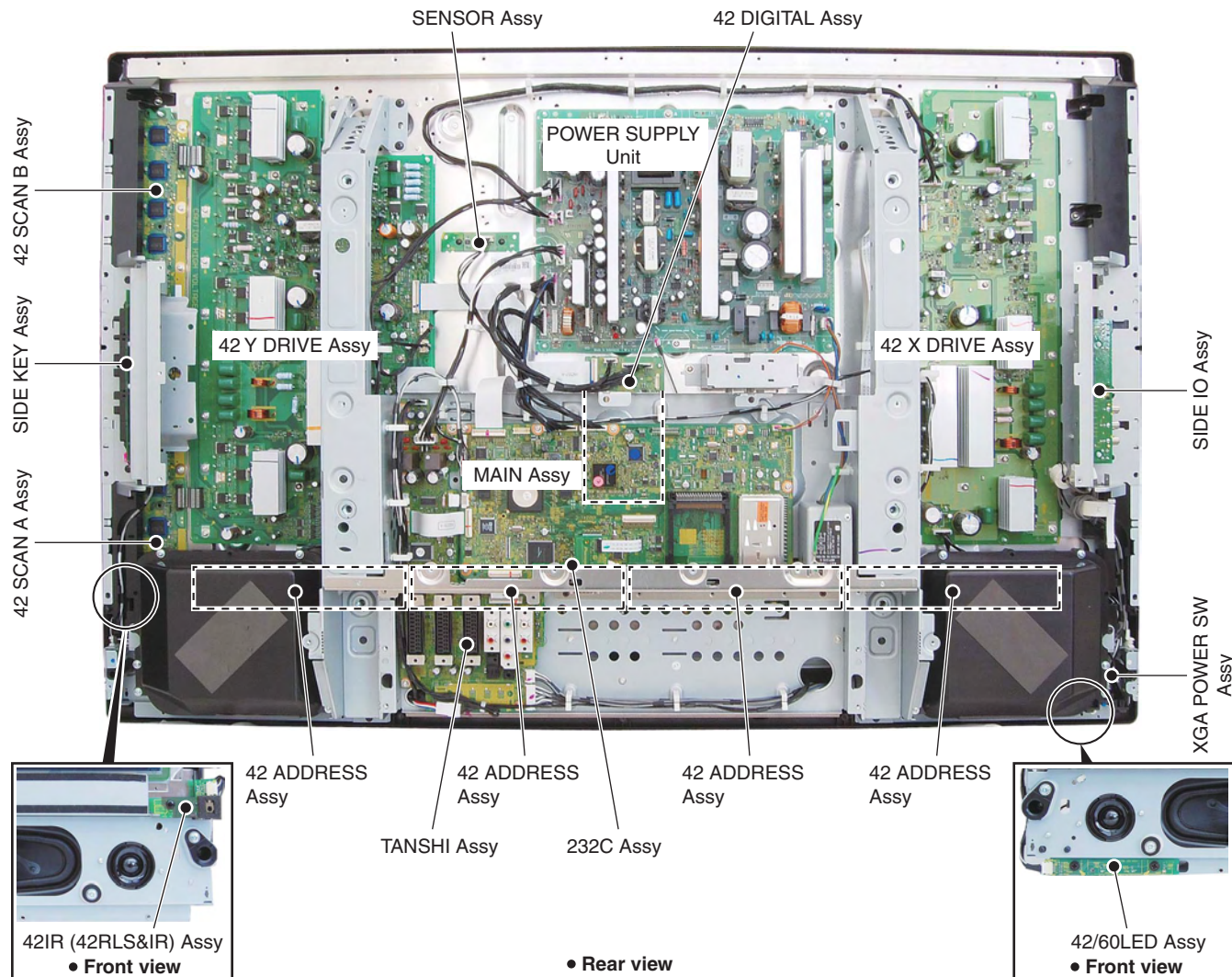
To "Structure of Layers in Panel Factory Mode 2"

Structure of Layers in Panel Factory Mode 2

7. PANEL FUNCTION (+)	
1. R-LEVEL	Items for use by engineers
2. G-LEVEL	
3. B-LEVEL	
4. ADDRESS L1	
5. ADDRESS L2	
.....	
11. ADDRESS U4	
12. STK MODE	
8. ETC (+)	
1. BACKUP DATA	For transferring backup data (after replacement of the DIGITAL Assy)
2. DIGITAL EEPROM	To clear data of the digital video
3. PD INFO.	
4. SD INFO.	For clearance of data for the corresponding items. The clearing method is the same: Select "CLEAR", using [→], then hold [ENTER/SET] pressed for at least 5 seconds. After clearance is completed, (ETC) is automatically selected.
5. HR-MTR INFO.	
6. PM/B1-B5	
7. P COUNT INFO.	
8. MAX TEMP.	
9. RASTER MASK SETUP (+)	
1. MASK OFF	For use while Raster Mask (full mask) is displayed. Use [↑] or [↓] to select the type of mask.
2. RST MASK 01	
.....	
26. RST MASK 25	
10. PATTEN MASK SETUP (+)	
1. MASK OFF	For use while Pattern Mask is displayed. Use [↑] or [↓] to select the type of mask.
2. PTN MASK 01	
.....	
50. PTN MASK 49	
11. COMBI MASK SETUP (+)	
1. MASK OFF	For use while Combination Mask is displayed. Use [↑] or [↓] to select the type of mask.
2. CMB MASK 01	
.....	
18. CMB MASK 17	

3.3 PCB LOCATION

• This photo. is PDP-4280XD model.



Note:

The wiring shown in the photo is different from the actual wiring, because the product in the photo is a prototype. Upon servicing, be sure to restore the original wiring of the unit after repair work.

LIST OF ASSEMBLIES

NSP	42 ADDRESS ASSY	AWV2451	TANSHI ASSY (PDP-4280XA)	AWW1251
	42 SCAN A ASSY	AWW1266	TANSHI ASSY (PDP-4280XD)	AWW1249
	└ IC2801 - IC2806	SN755875PZT-P	TANSHI ASSY (PDP-428XD)	AWW1247
NSP	42 SCAN B ASSY	AWW1267	SIDE IO ASSY	AWW1253
	└ IC2901 - IC2906	SN755875PZT-P	232C ASSY	AWW1254
	42 X DRIVE ASSY	AWV2452		
	42 Y DRIVE ASSY	AWW1262	42/60LED ASSY	AWW1276
	XGA POWER SW ASSY	AWW1261	42IR ASSY (PDP-4280XA, XD)	AWW1282
			42RLS&IR ASSY (PDP-428XD)	AWW1277
	42 DIGITAL ASSY	AWW1271	SIDE KEY ASSY	AWW1286
	SENSOR ASSY	AWW1272		
				
			POWER SUPPLY UNIT	AXY1157
	MAIN ASSY (PDP-4280XA)	AWV2463		
	MAIN ASSY (PDP-4280XD)	AWV2462	PDP SERVICE ASSY 428	AWU1276
	MAIN ASSY (PDP-428XD)	AWV2461		

3.4 CLEANING

A



Name	Part No.	Remarks
Cleaning liquid	GEM1004	Used to fan cleaning. Refer to “10.4 CHASSIS SECTION (1/2)”.
Cleaning paper	GED-008	

B

■

C

■

D

■

E

■

F



5



6



7



8



A

B

C

D

E

F



5



6



7



8

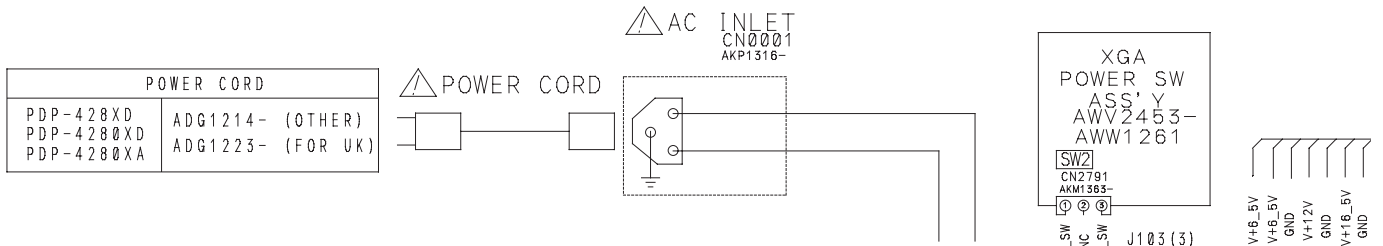


PDP-4280XA

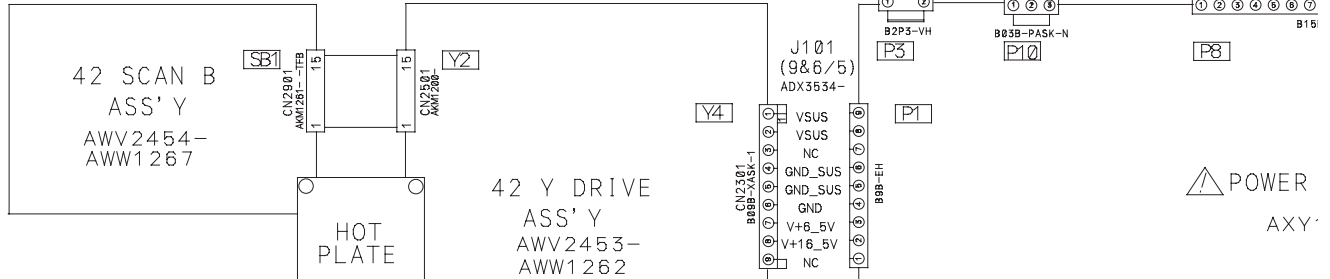
4. BLOCK DIAGRAM

4.1 OVERALL WIRING DIAGRAM (1/2)

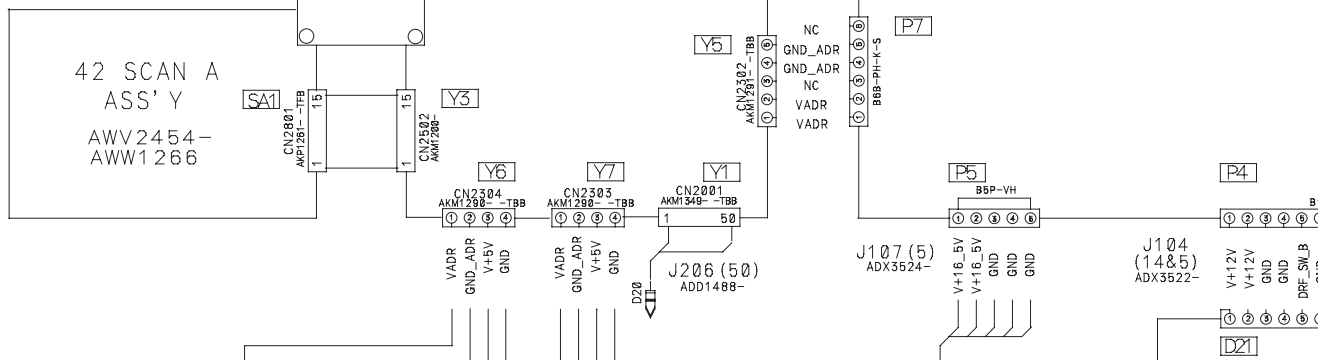
A



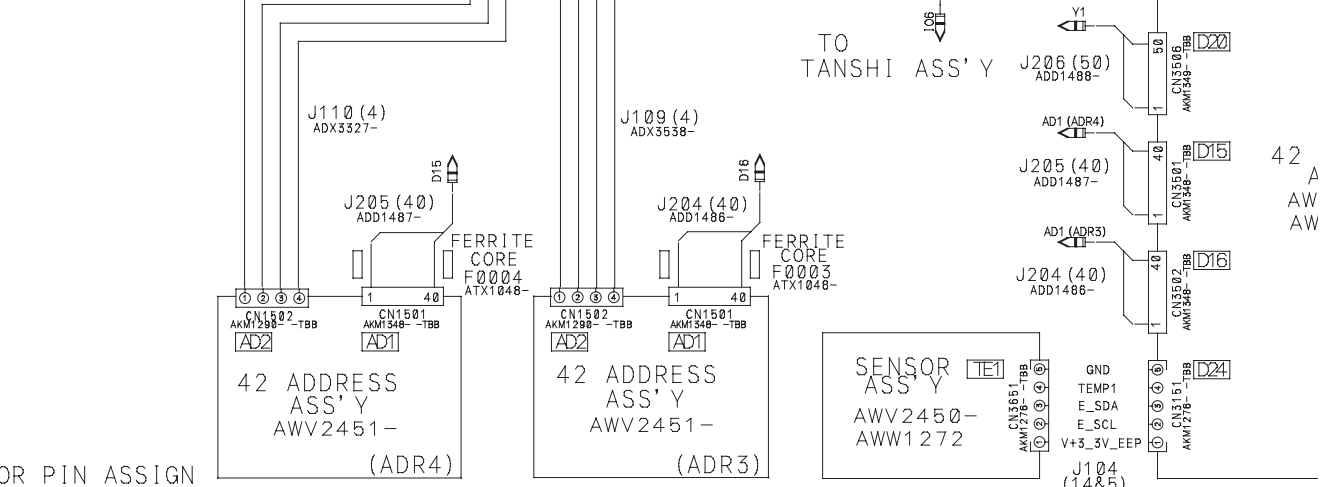
B



C



D



E

CONNECTOR PIN ASSIGN

CN3501	D15	→	CN1501	AD1
CN3502	D16	→	CN1501	AD1
CN3503	D17	→	CN1501	AD1
CN3504	D18	→	CN1501	AD1

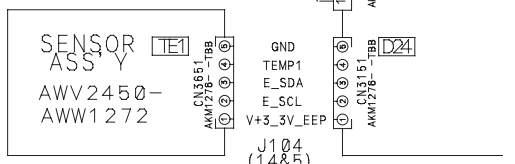
1-40. NC	21-20. CP
2-39. ADR_PD	22-19. NC
3-38. PSIZE	23-18. GND
4-37. GND	24-17. GND
5-36. V+BV	25-16. CLKN
6-35. V+BV	26-15. CLKP
7-34. GND	27-14. NC
8-33. GND	28-13. GND
9-32. NC	29-12. NC
10-31. AN	30-11. DN
11-30. AP	31-10. DP
12-29. NC	32-9. NC
13-28. GND	33-8. NC
14-27. NC	34-7. GND
15-26. BN	35-6. V+3.3V_D
16-25. BP	36-5. V+3.3V_D
17-24. GND	37-4. GND
18-23. GND	38-3. NC
19-22. NC	39-2. LS2
20-21. CN	40-1. GND

CN2502	Y3	→	CN2501	Y2
CN2801	SA1	→	CN2901	SB1

1. VH	1. VH
2. VH1	2. VH1
3. NC	3. NC
4. NC	4. NC
5. GNDH	5. GNDH
6. GNDH	6. GNDH
7. GNDH	7. GNDH
8. CLK	8. CLK
9. OC2	9. OC2
10. OC1	10. OC1
11. CLK	11. CLK
12. LE	12. LE
13. GNDH	13. GNDH
14. GNDH_RH	14. GNDH_RH
15. IC5V	15. IC5V

CN3505	D19	→	CN1001	X1
--------	-----	---	--------	----

1-40. XCN_PD	21-20. GND
2-39. NC	22-19. XKOF1_ADJ
3-38. GND	23-18. XKOF2_ADJ
4-37. XSUS_B	24-17. GND
5-36. XSUS_U	25-16. XDRV_PD
6-35. XSUS_D	26-15. XDRV_PD
7-34. GND	27-14. PSW2
8-33. XSUS_D	28-13. GND
9-32. GND	29-12. Xrsv_2
10-31. XSUS_G	30-11. Xrsv_1
11-30. GND	31-10. NC
12-29. XPRST	32-9. NC
13-28. GND	33-8. NC
14-27. XPRST	34-7. NC
15-26. GND	35-6. NC
16-25. XKOF2	36-5. NC
17-24. GND	37-4. NC
18-23. XSOF_D	38-3. NC
19-22. GND	39-2. V+
20-21. XSUS_MUTE	40-1. XSUS_PD



CN3506	D20	→	CN2001	Y1
--------	-----	---	--------	----

1-50. GND	26-25. YKNOFS3
2-49. SCN5V_PD	27-24. YKNOFS4
3-48. GND	28-23. GND
4-47. GND	29-22. YKNOFS
5-46. CLK	30-21. YRST_D
6-45. CLK	31-20. YSOFST_G
7-44. GND	32-19. YSOFST_D
8-43. LE	33-18. GND
9-42. OC2	34-17. VOFSS_ADJ
10-41. OCT	35-16. YPRST_ADJ
11-40. GND	36-15. GND
12-39. XSUS_B	37-14. NC
13-38. XSUS_U	38-13. YKNOFS1_2_ADJ
14-37. GND	39-12. GND
15-36. XSUS_D	40-11. YKNOFS4_ADJ
16-35. XSUS_G	41-10. GND
17-34. GND	42-9. YRsv1
18-33. GND	43-8. YRsv2
19-32. SUS_MUTE	44-7. YRsv3
20-31. GND	45-6. GND
21-30. XSUS_MSK_H	46-5. VDD_PD
22-29. XSUS_MSK_L	47-4. YRsv4
23-28. GND	48-3. SCAN_PD
24-27. YKNOFS1	49-2. YDRV_PD
25-26. YKNOFS2	50-1. PSW2

CN3001	D11	→	
--------	-----	---	--

1-50. GND	21-20. GND
2-49. LVDS_ON	22-19. LVDS_ON
3-48. REQ_MD	23-18. REQ_MD
4-47. RXO_MD	24-17. RXO_MD
5-46. TXD_MD	25-16. TXD_MD
6-45. GND	26-15. GND
7-44. GND	27-14. GND
8-43. LVDS_E1+	28-13. LVDS_E1+
9-42. LVDS_E1-	29-12. LVDS_E1-
10-41. GND	30-11. GND
11-40. LVDS_D1+	31-10. LVDS_D1+
12-39. LVDS_D1-	32-9. LVDS_D1-
13-38. GND	33-8. GND
14-37. LVDS_CLK+	34-7. LVDS_CLK+
15-36. LVDS_CLK-	35-6. LVDS_CLK-
16-35. GND	36-5. GND
17-34. LVDS_C1+	37-4. LVDS_C1+
18-33. LVDS_C1-	38-3. LVDS_C1-
19-32. GND	39-2. GND
20-31. LVDS_B1+	40-1. LVDS_B1+
21-30. LVDS_B1-	41-0. LVDS_B1-
22-29. GND	42-0. GND
23-28. LVDS_A1+	43-0. LVDS_A1+
24-27. LVDS_A1-	44-0. LVDS_A1-
25-26. GND	45-0. GND

4.2 OVERALL WIRING DIAGRAM (2/2)

A

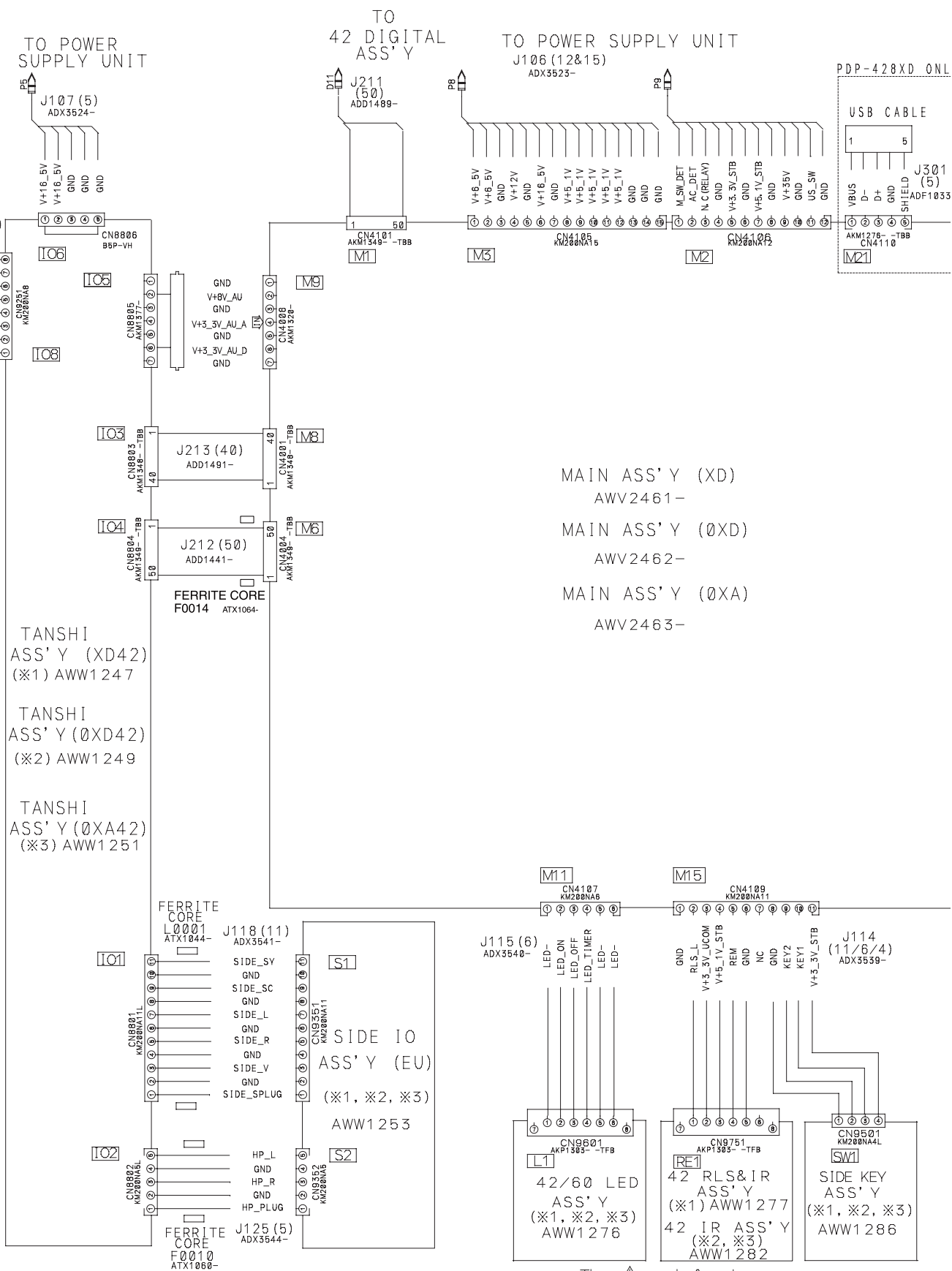
B

C

D

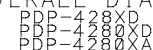
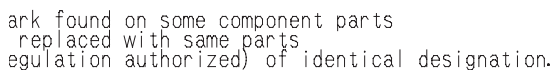
E

F

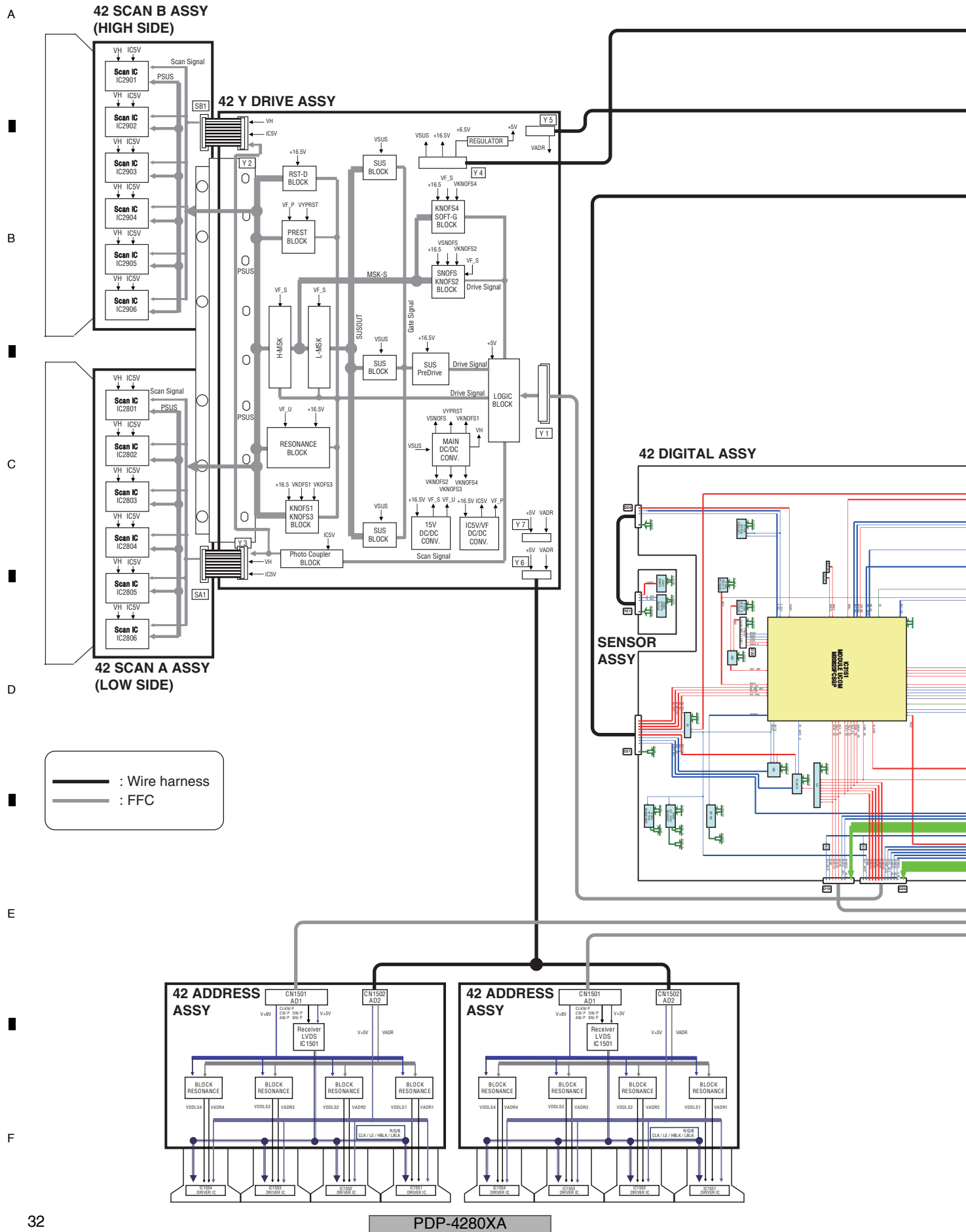


The  mark found on some component parts should be replaced with same parts (safety regulation authorized) of identical

13-

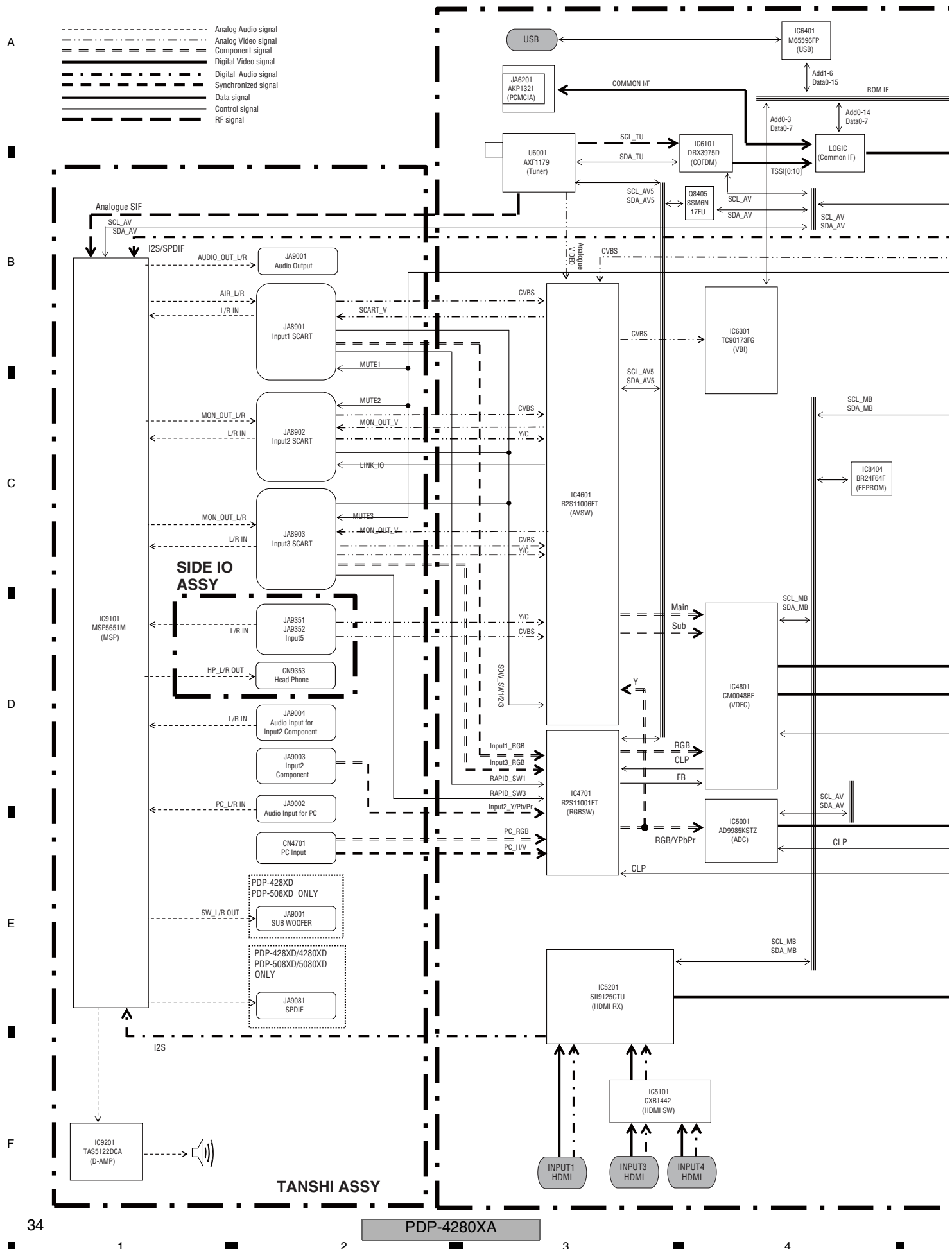


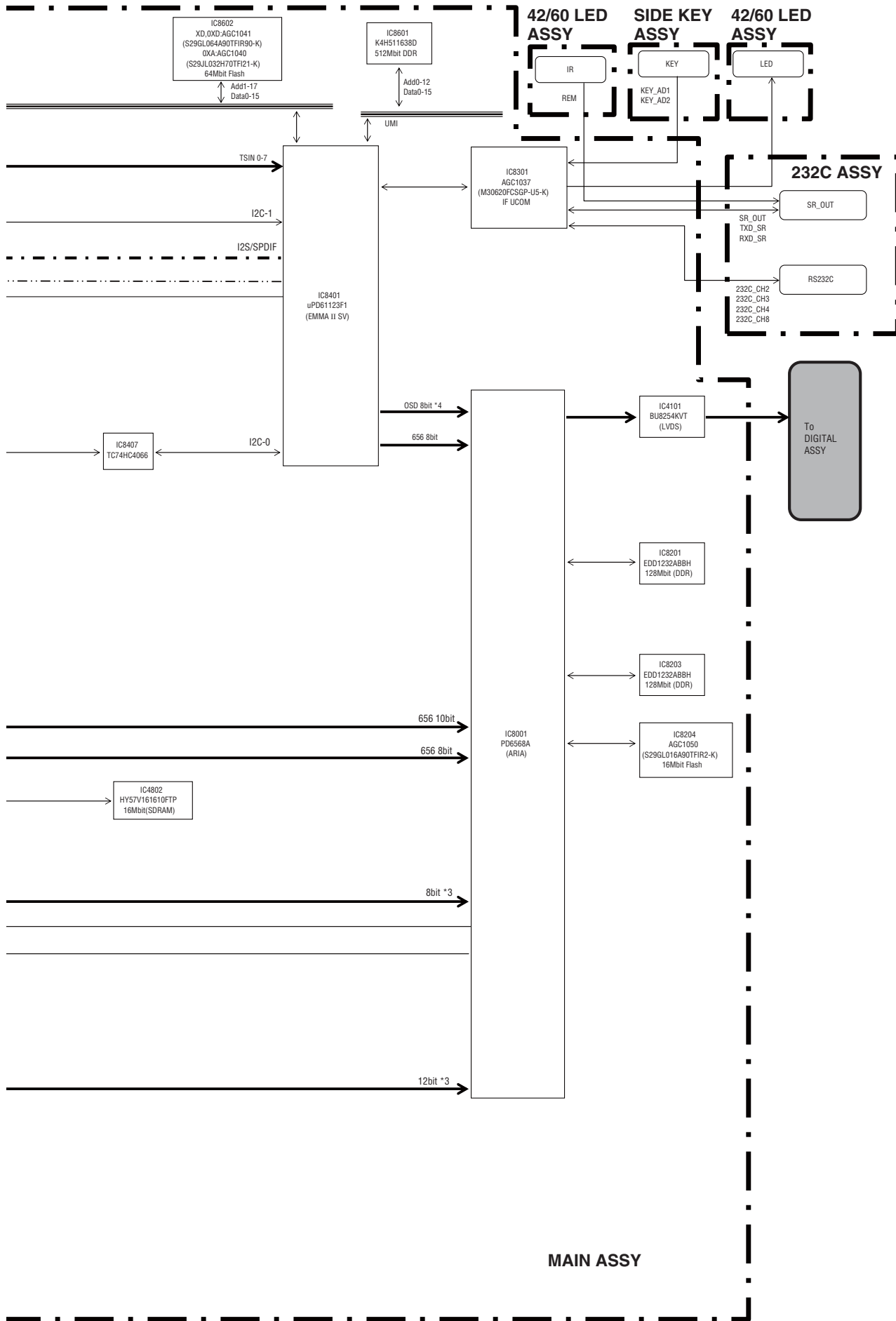
4.3 OVERALL BLOCK DIAGRAM (1/2)





4.4 OVERALL BLOCK DIAGRAM (2/2)





A

B

C

D

E

F

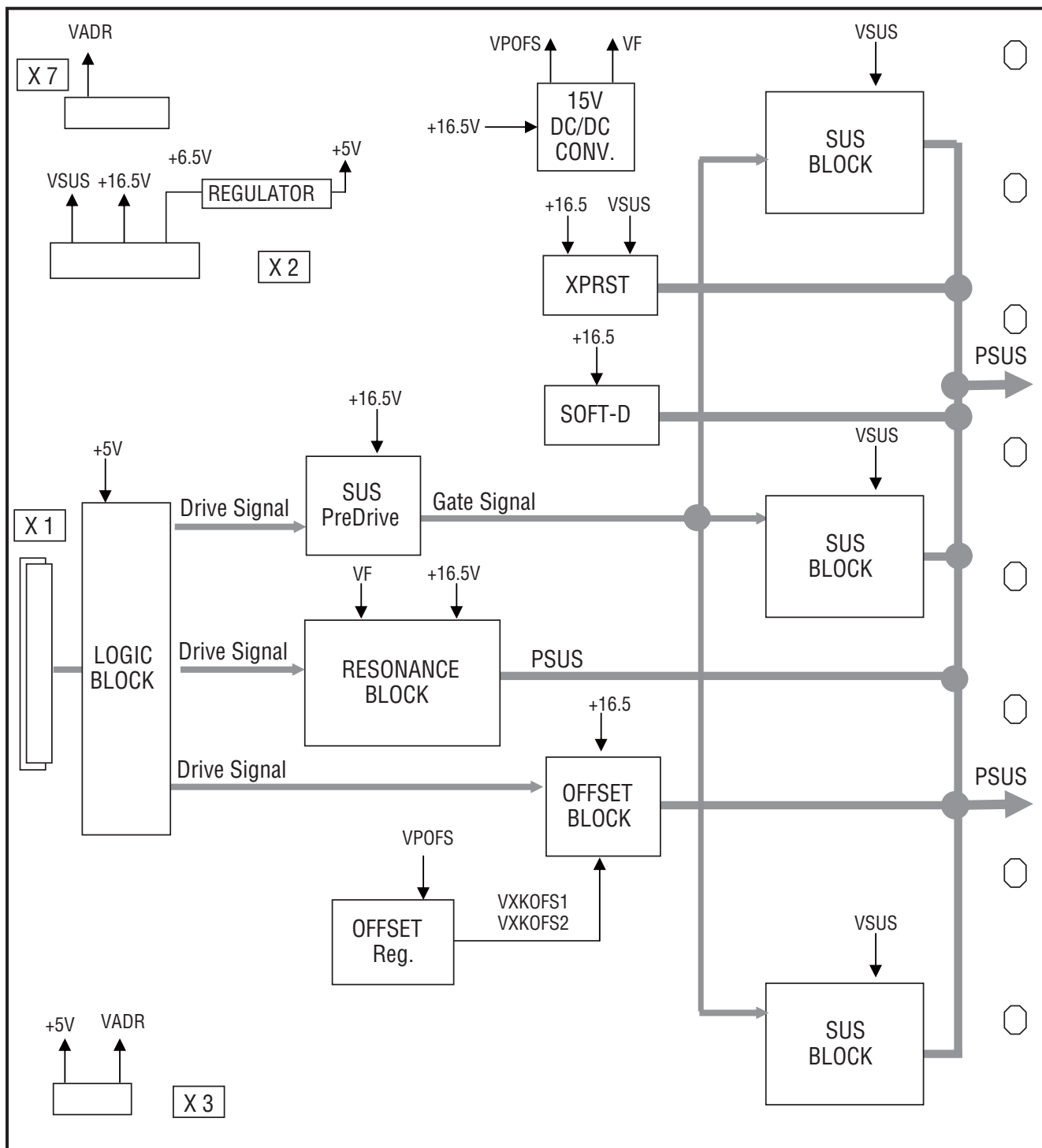
4

F



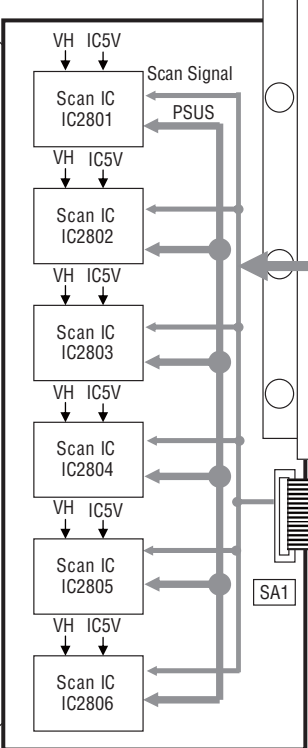
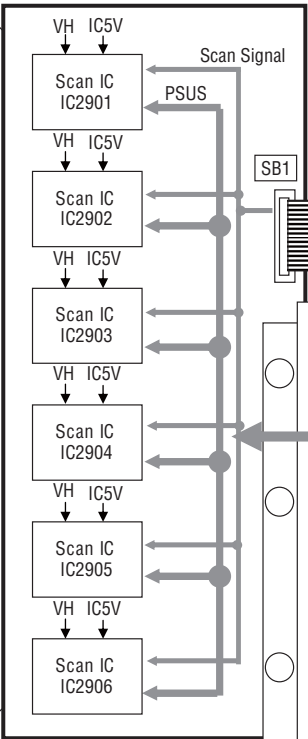
4.6 42 X DRIVE ASSY

42 X DRIVE ASSY



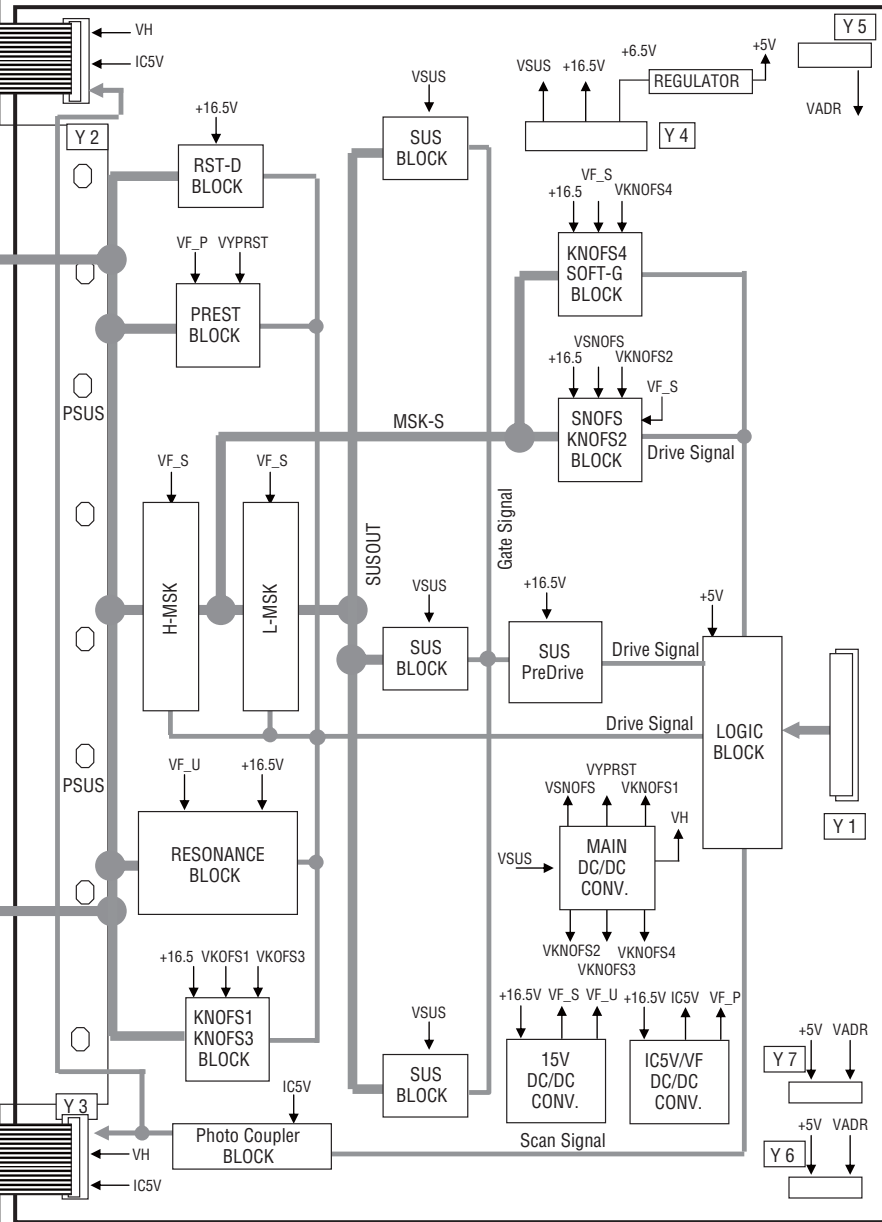
4.7 42 Y DRIVE, 42 SCAN A and B ASSYS

42 SCAN B ASSY
(HIGH SIDE)

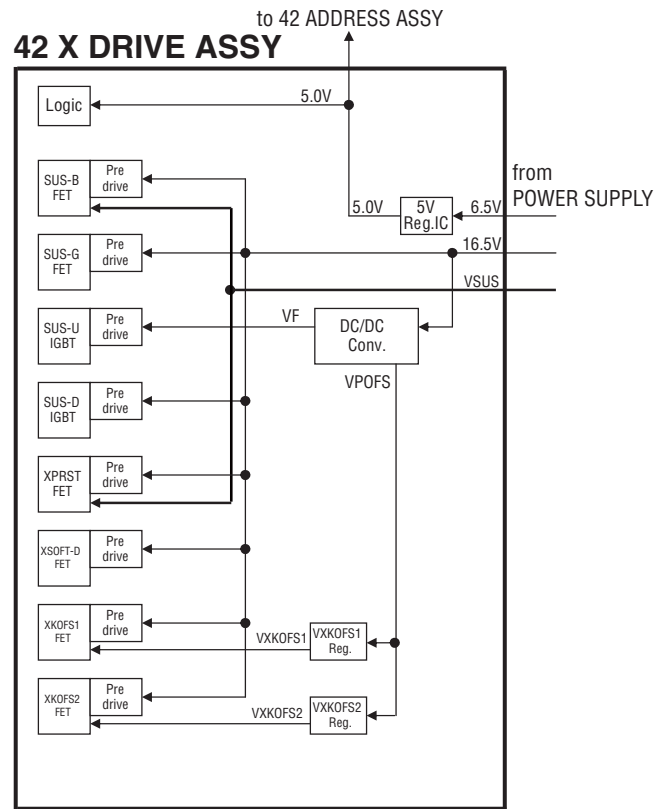
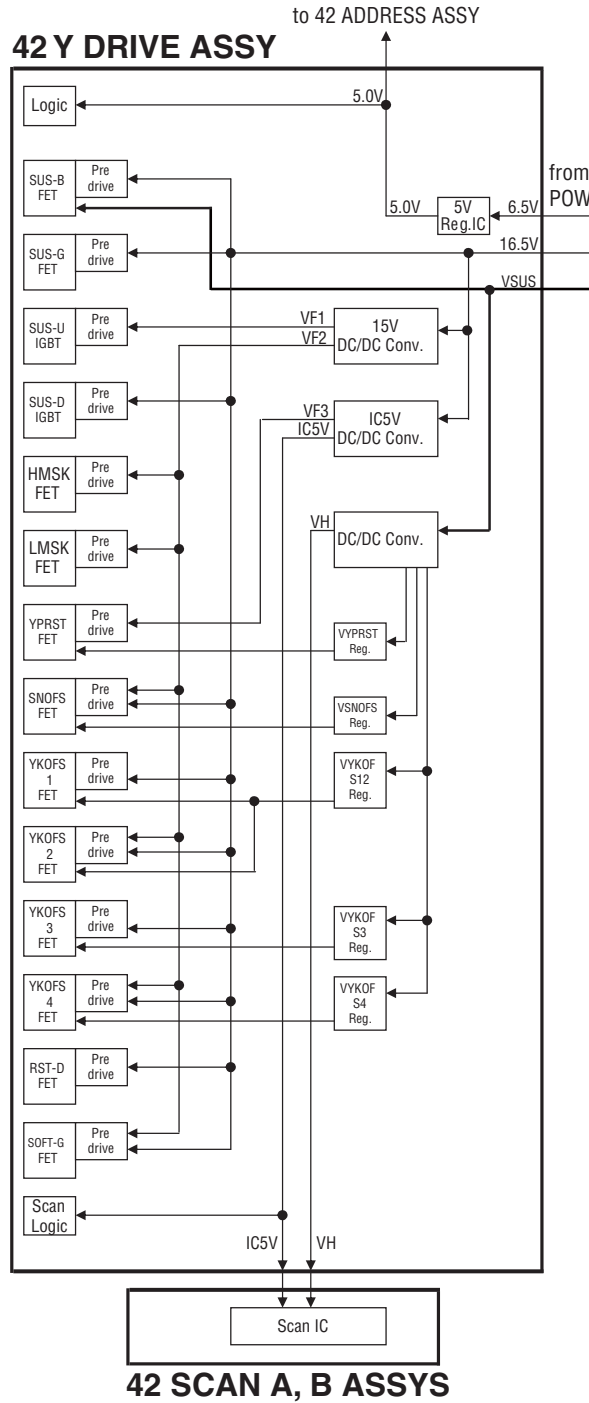


42 SCAN A ASSY
(LOW SIDE)

42 Y DRIVE ASSY



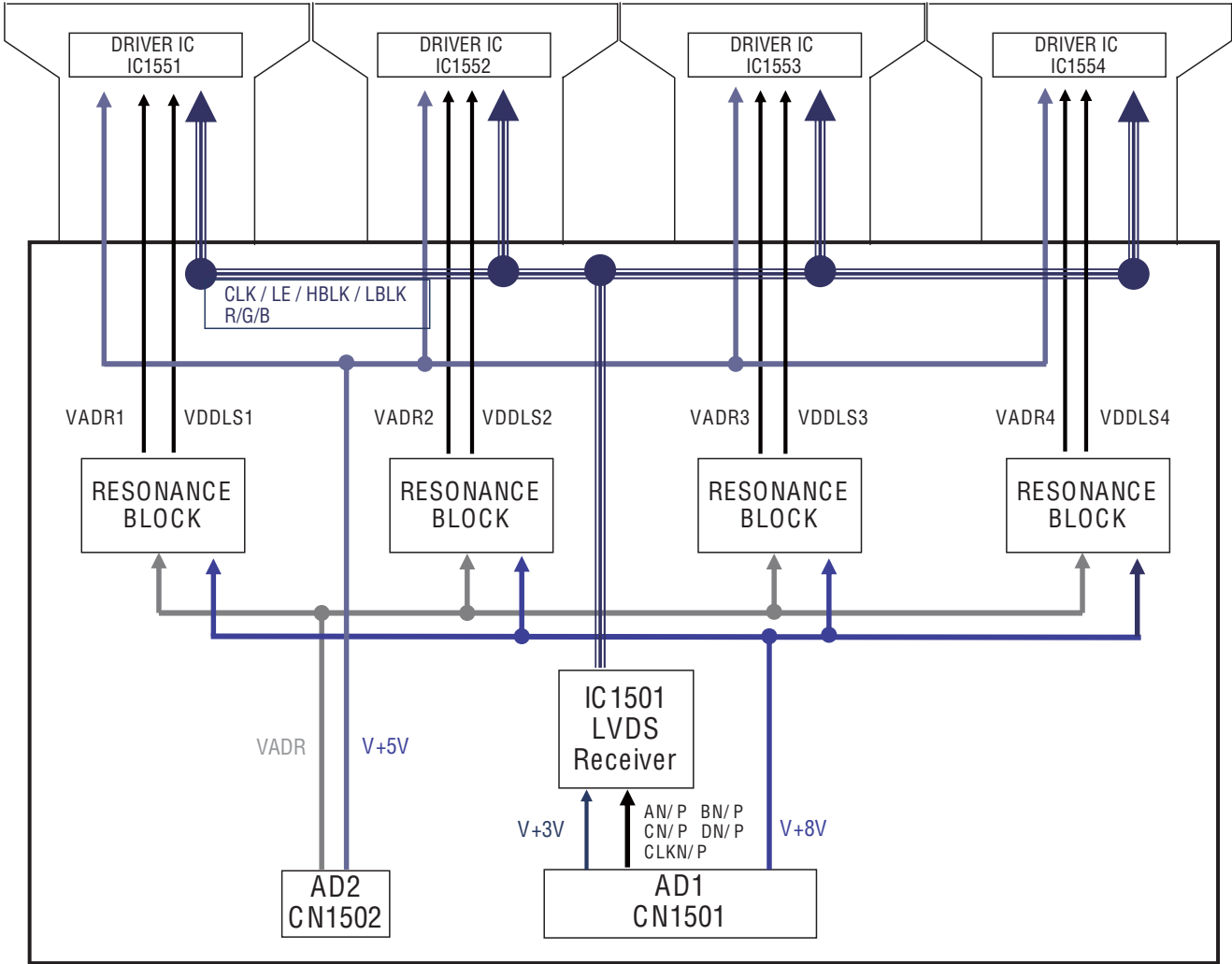
4.8 POWER SUPPLY BLOCK of 42 X, Y DRIVE and 42 SCAN A, B ASSYS



Note:
VYPRST, VSNOFS, VYKOF S12, VYKOF S3, VYKOF S4 and VXKOF S2 voltages are electrical volume controls.

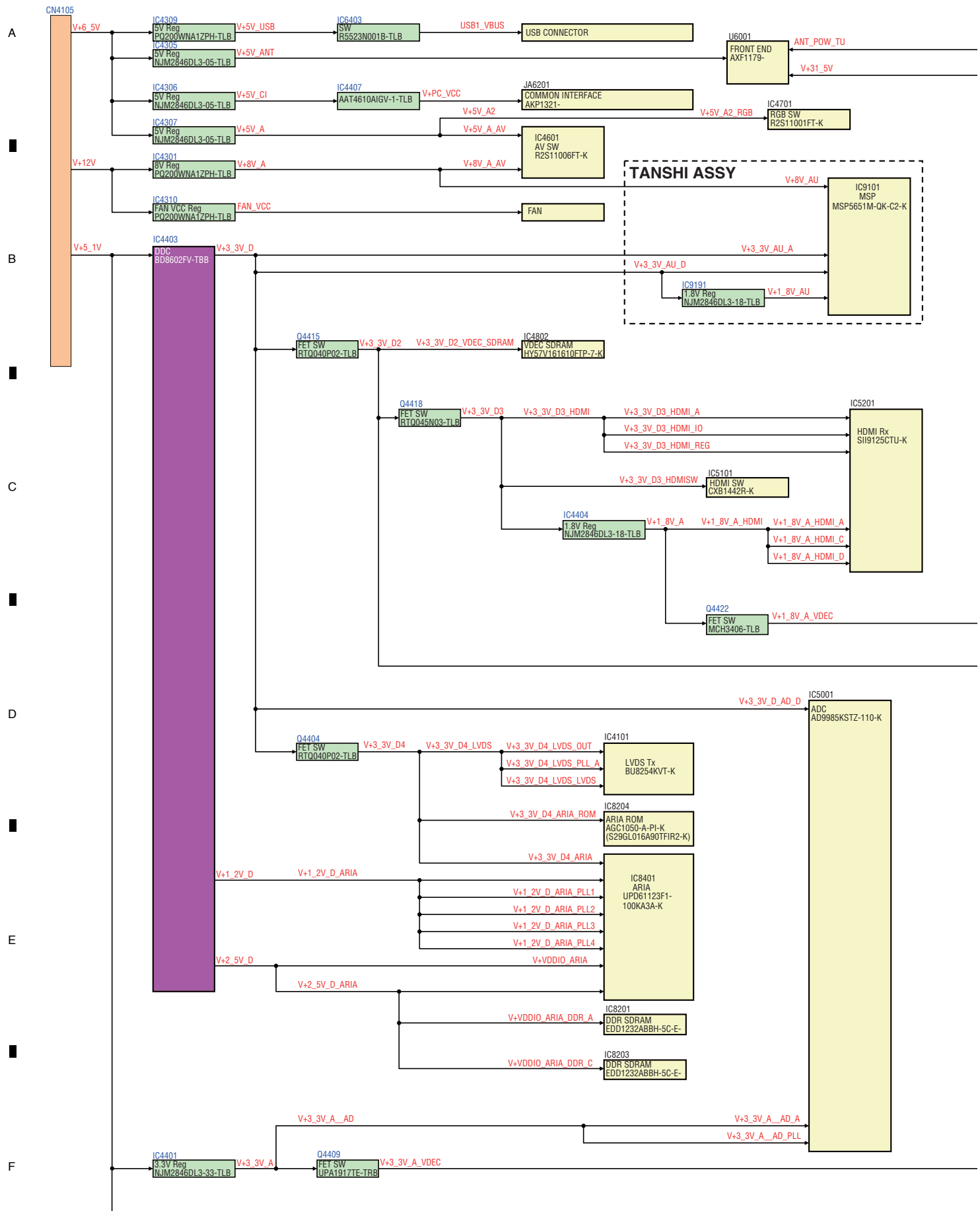
4.9 42 ADDRESS ASSY

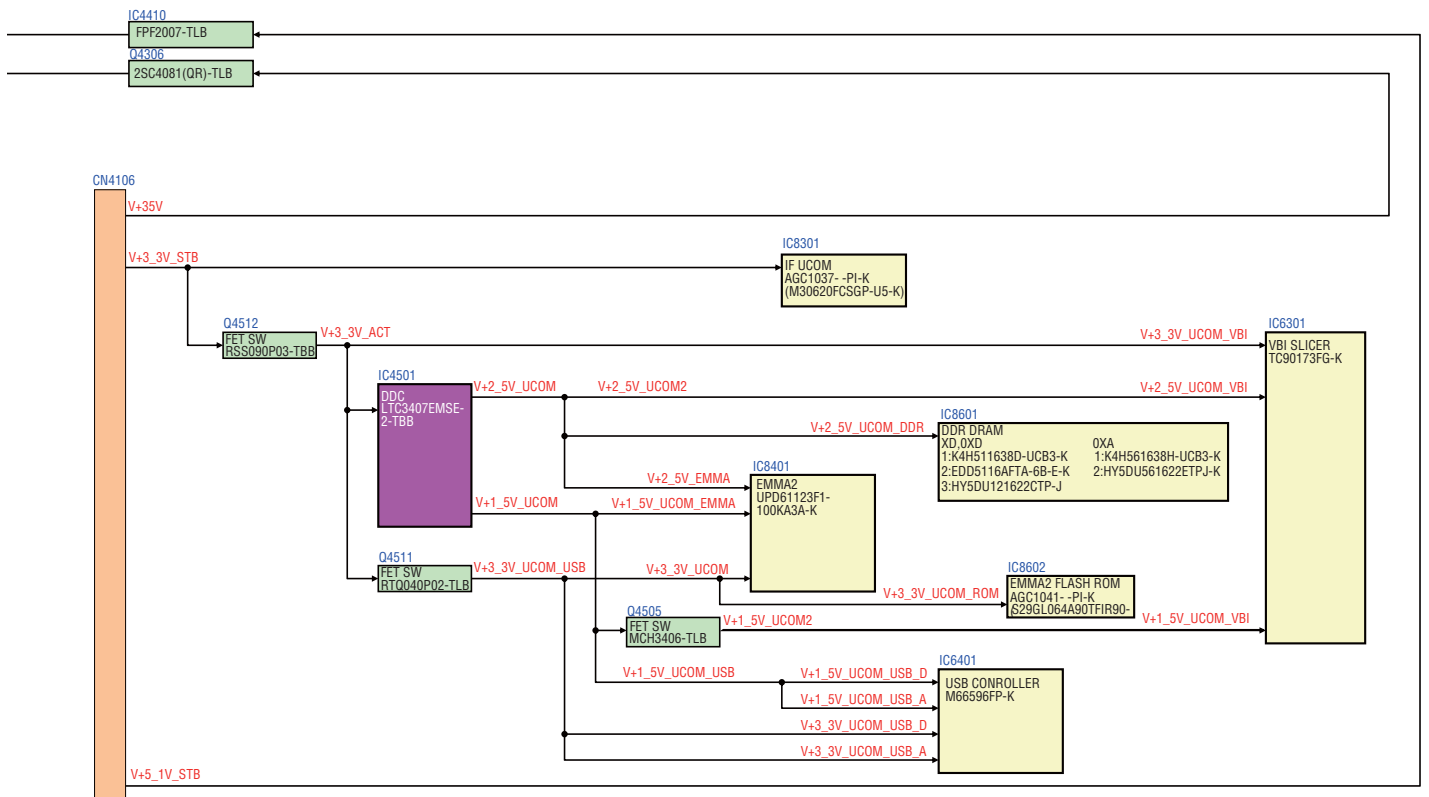
42 ADDRESS ASSY



[illegible]

4.11 POWER SUPPLY BLOCK of MULTI BASE SECTION

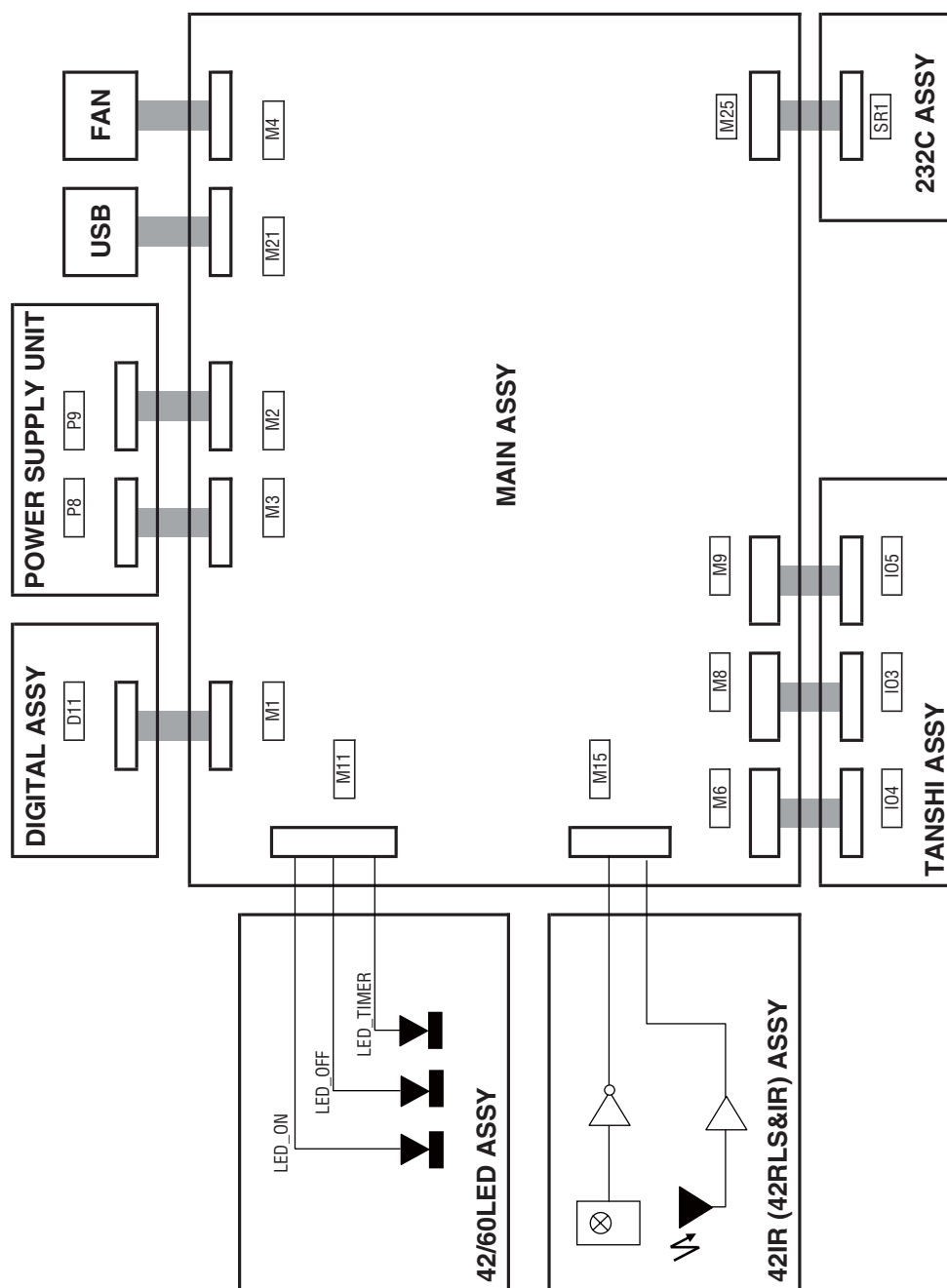




4

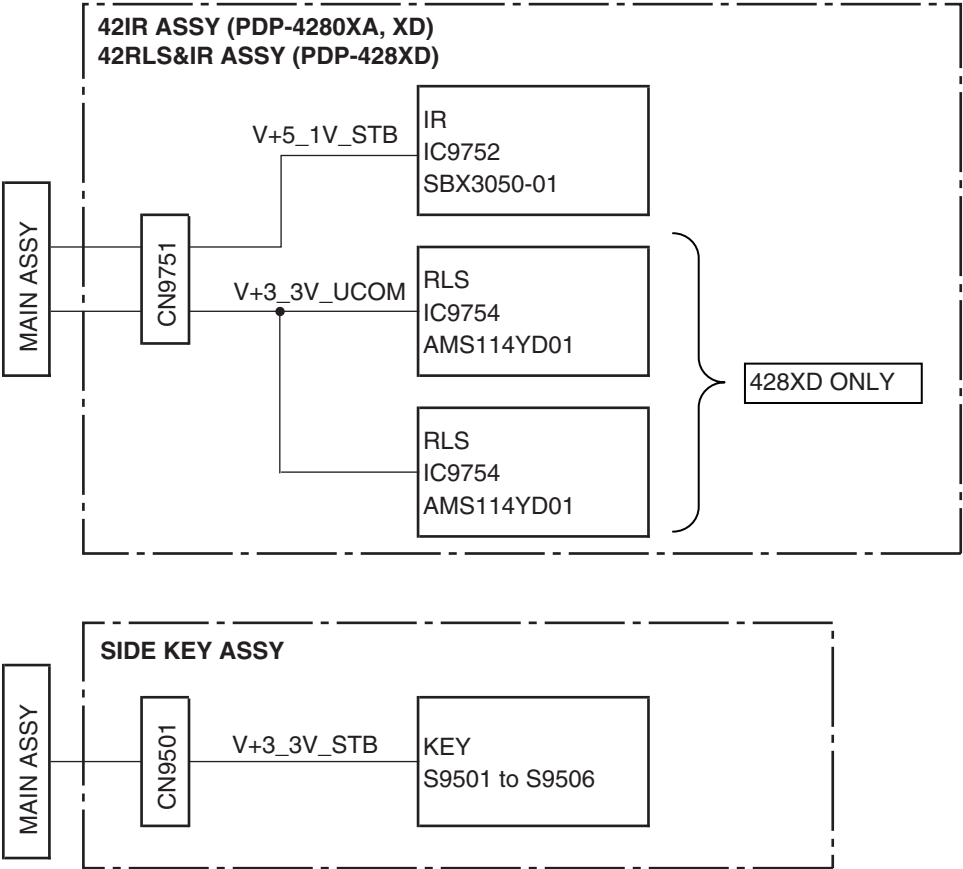


4.13 42/60LED and 42IR (42RLS&IR) ASSYS



1 2 3 4

4.14 POWER SUPPLY BLOCK of 42IR (42RLS&IR) and SIDE KEY ASSYS



5. DIAGNOSIS

5.1 POWER SUPPLY OPERATION

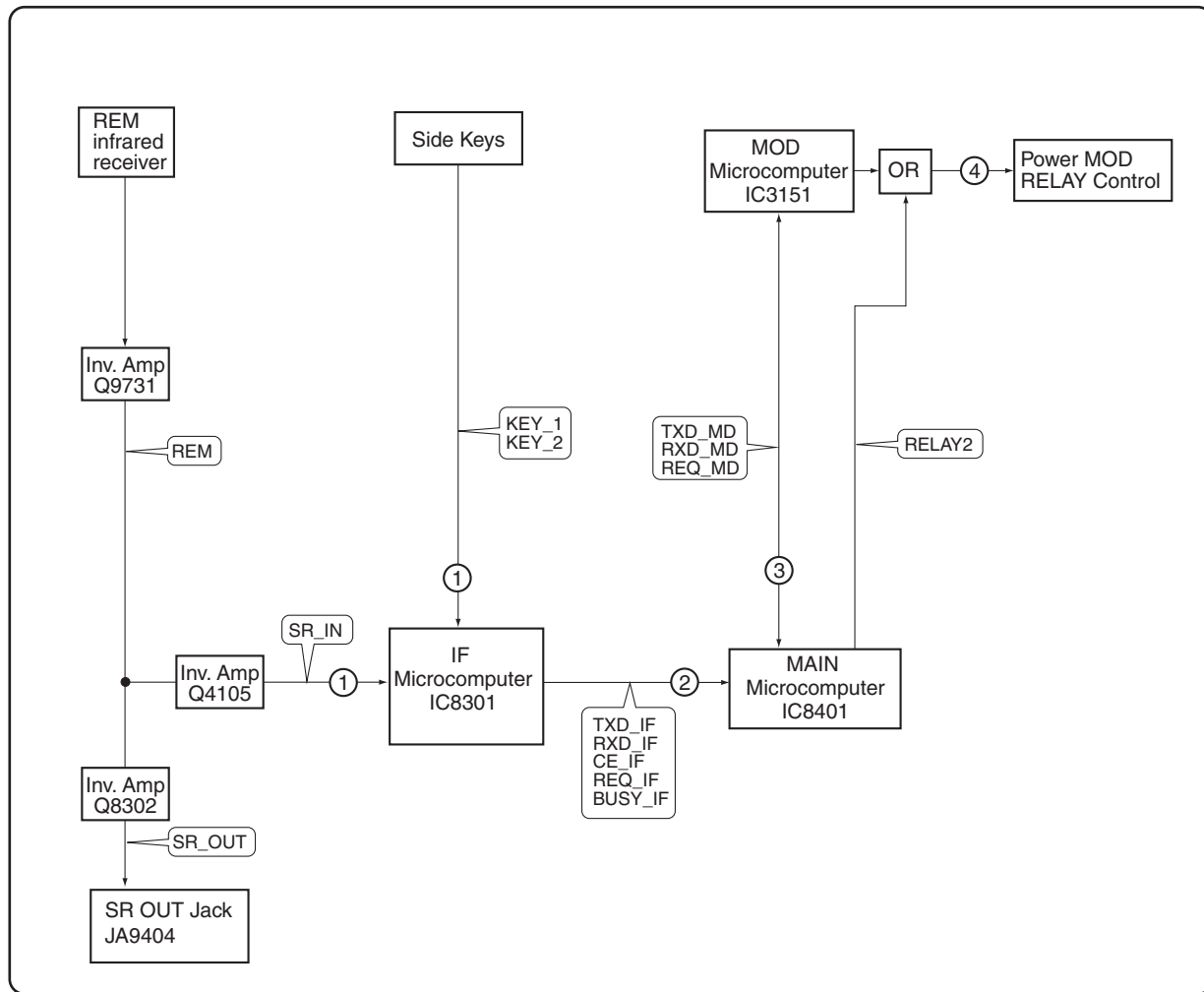
5.1.1 LED DISPLAY INFORMATION

LED Pattern



State	LED Pattern	Remarks
AC OFF or Main power switch OFF	B R O	
Standby power management	B R O	
Power ON (Screen ON)	B R O	
Power-down	B R O Once 500ms Twice n times 2.5s Once	
Shutdown	B R O 500ms Once Twice n times 2.5s Once	
No digital adjustment data copied for backup	B R O 200ms	The LEDs flash only while the panel is turned on.
In the process of rewriting the program of the microcomputer	B R O 100ms 100ms	
During factory operation	B R O	
During reservation video recording (Unit: Standby)	B R O	Step-up D model, Regular D model only
During reservation video recording (Unit: ON)	B R O	Step-up D model, Regular D model only
Sleep timer	B R O	Regular A model only

5.1.2 POWER ON SEQUENCE



- ① : The remote control (or KEY) signal is input to the IF microcomputer.
- ② : The IF microcomputer sends the operation data of the remote control unit (or KEY) to the main microcomputer.
- ③ : The main microcomputer issues a startup command (PON) to the MOD microcomputer.
- ④ : The relay is controlled with logical OR interpretation of control signals by the main microcomputer and module (MOD) microcomputer.

5.1.3 DETAILS OF POWER ON SEQUENCE

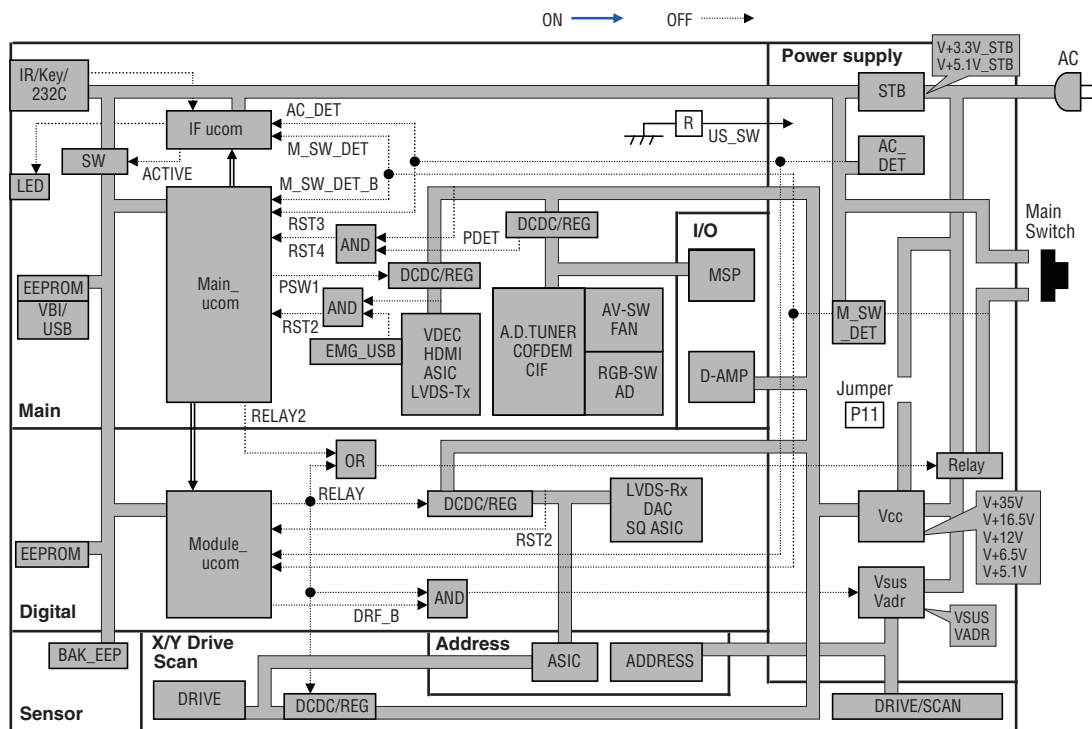
Power supply status - AC off

Microcomputer output port state

IF: ACTIVE	OFF
Main: RELAY2	OFF
Main: PSW1	OFF
Module: RELAY	OFF
Module: DRF_B	OFF

Microcomputer input port state

Main: RST4	OFF
Main: RST2	OFF
Module: RST2	OFF



The state of AC cord is pulled out.

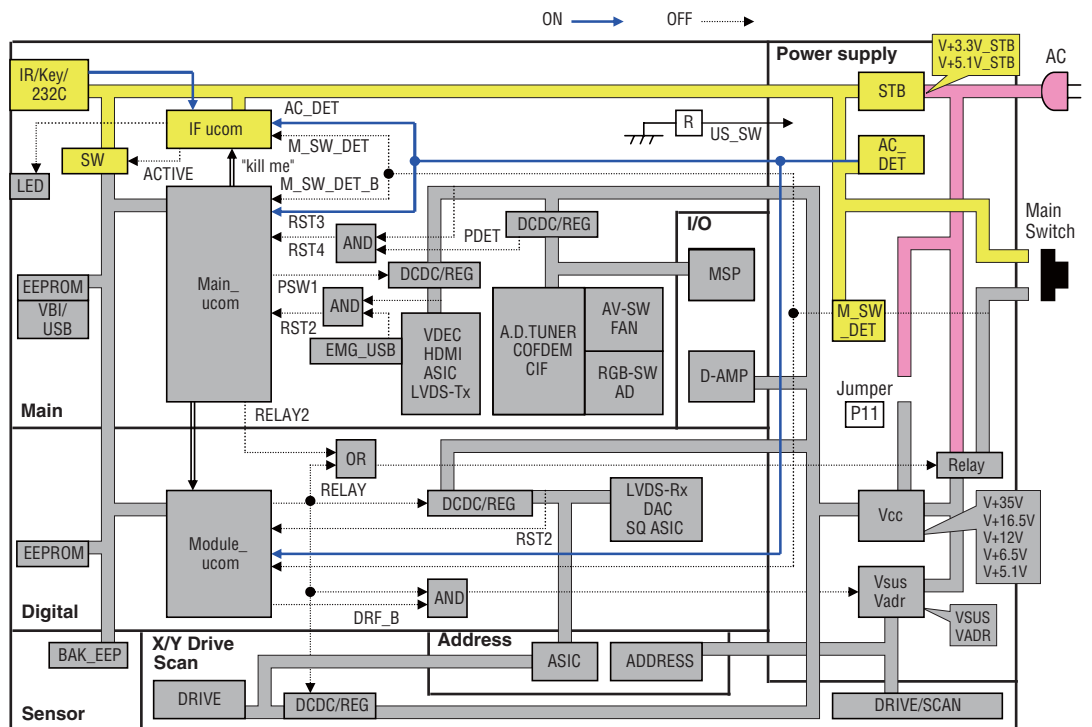
Power supply status - Passive standby (Main switch off)

Microcomputer output port state

IF: ACTIVE	OFF
Main: RELAY2	OFF
Main: PSW1	OFF
Module: RELAY	OFF
Module: DRF_B	OFF

Microcomputer input port state

Main: RST4	OFF
Main: RST2	OFF
Module: RST2	OFF



The user operation is invalid. (All LED: OFF)

Among standby power devices, only the IF microcomputer periphery operates.

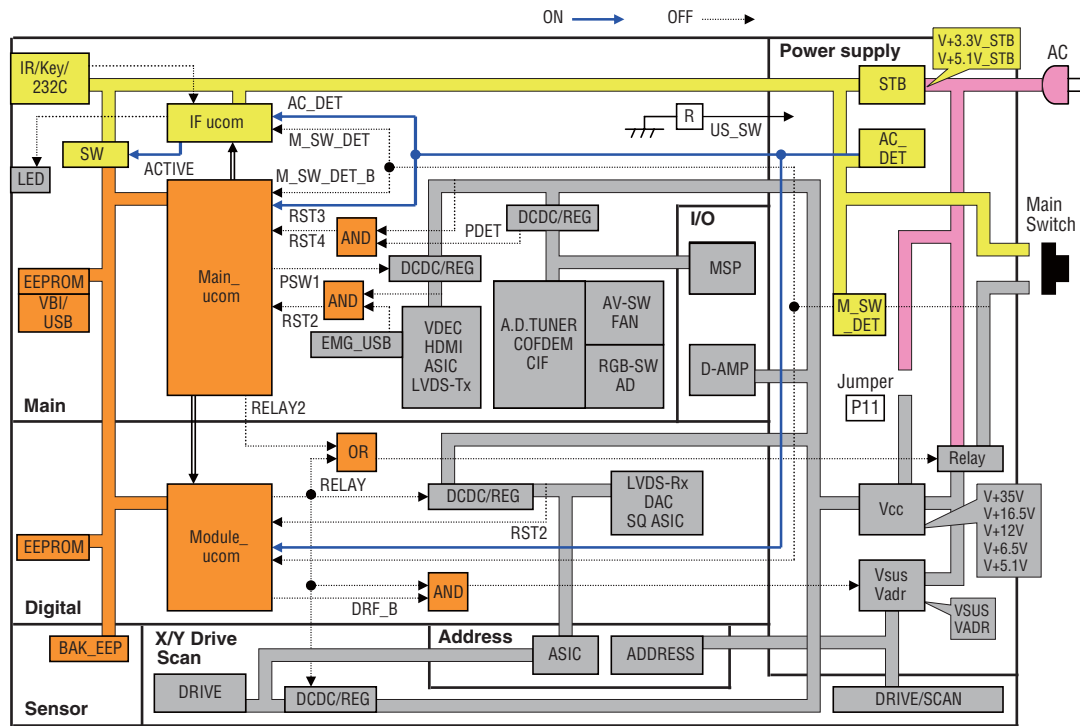
A

Microcomputer
output port state

IF: ACTIVE	ON
Main: RELAY2	OFF
Main: PSW1	OFF
Module: RELAY	OFF
Module: DRF_B	OFF

Microcomputer
input port state

Main: RST4	OFF
Main: RST2	OFF
Module: RST2	OFF



The user operation is invalid. (All LED: OFF)

Standby power devices (periphery of IF/Main/Module microcomputer) operate.

Power supply status - Passive standby

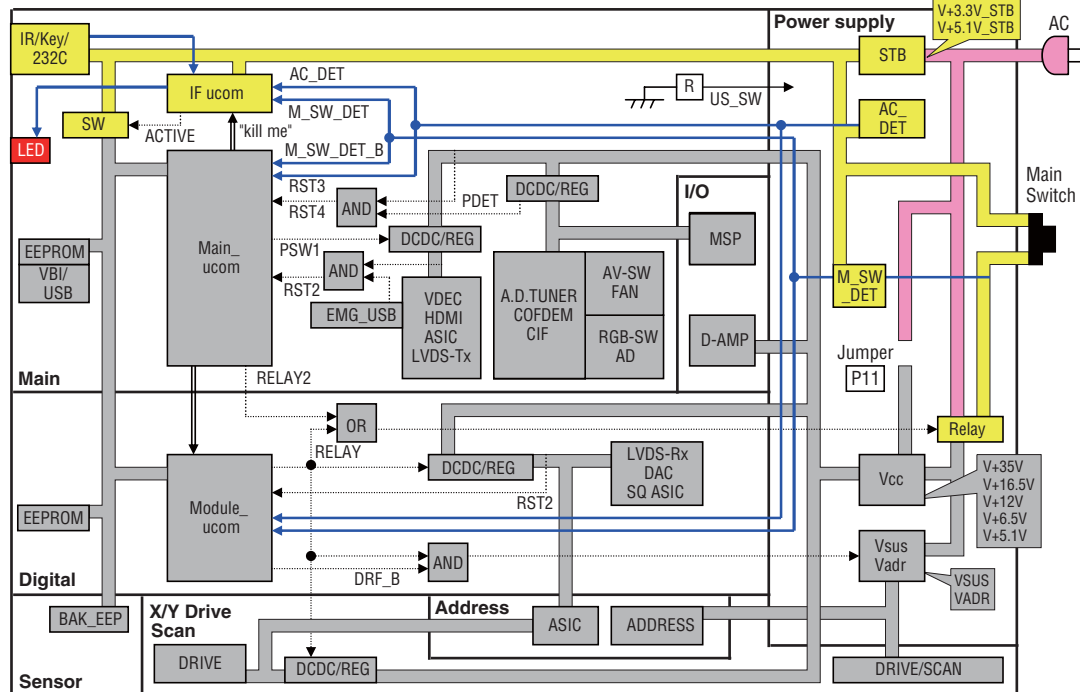
ON OFF

Microcomputer
output port state

IF: ACTIVE	OFF
Main: RELAY2	OFF
Main: PSW1	OFF
Module: RELAY	OFF
Module: DRF_B	OFF

Microcomputer
input port state

Main: RST4	OFF
Main: RST2	OFF
Module: RST2	OFF



Remote control unit waiting state. (Red LED: ON)

Among standby power devices, only the IF microcomputer periphery operates.

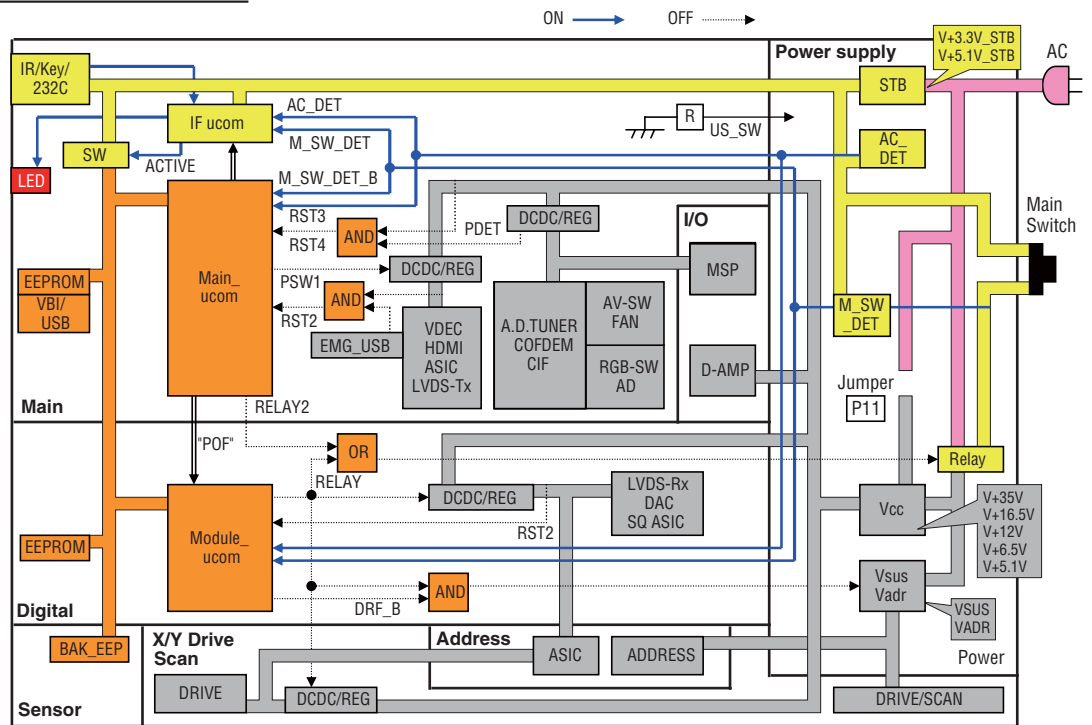
Power supply status - Active standby

Microcomputer output port state

IF: ACTIVE	ON
Main: RELAY2	OFF
Main: PSW1	OFF
Module: RELAY	OFF
Module: DRF_B	OFF

Microcomputer input port state

Main: RST4	OFF
Main: RST2	OFF
Module: RST2	OFF



Remote control unit waiting state. (Red LED: ON)

Standby power devices (periphery of IF/Main/Module microcomputer) operate.

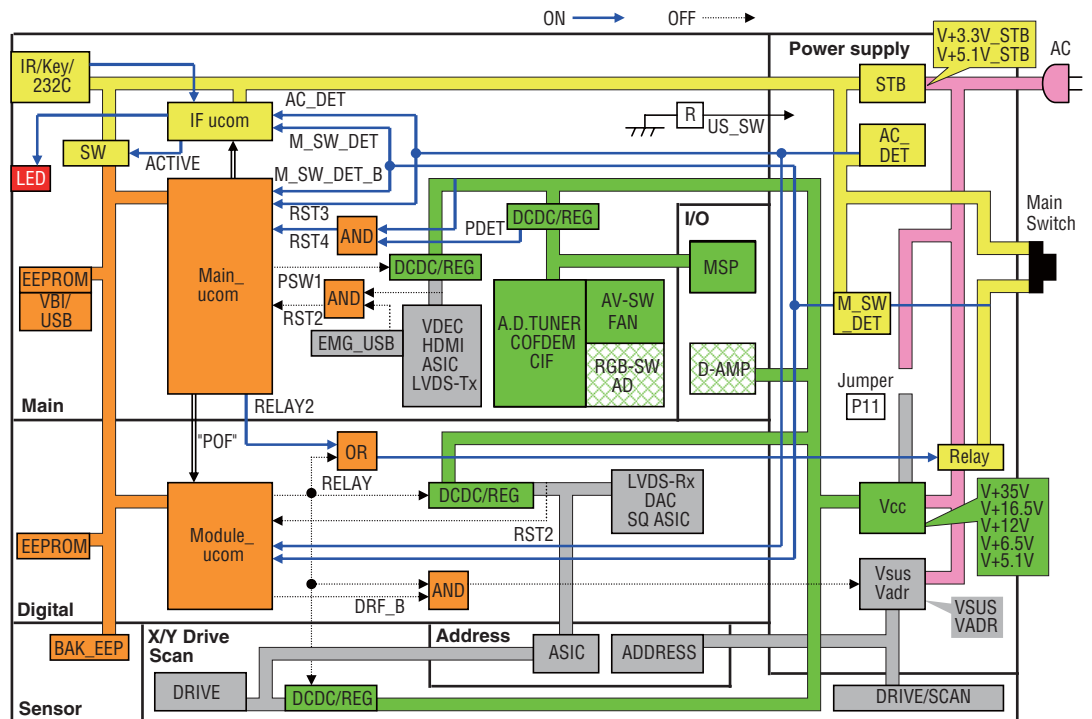
Power supply status - Functional standby

Microcomputer output port state

IF: ACTIVE	ON
Main: RELAY2	ON
Main: PSW1	OFF
Module: RELAY	OFF
Module: DRF_B	OFF

Microcomputer input port state

Main: RST4	ON
Main: RST2	OFF
Module: RST2	OFF



Remote control unit waiting state. (Red LED: ON)

Standby power device and some Vcc power devices operate.

RGB-SW/AD/D-AMP are electrified, but uses the power-saving mode function of the IC.

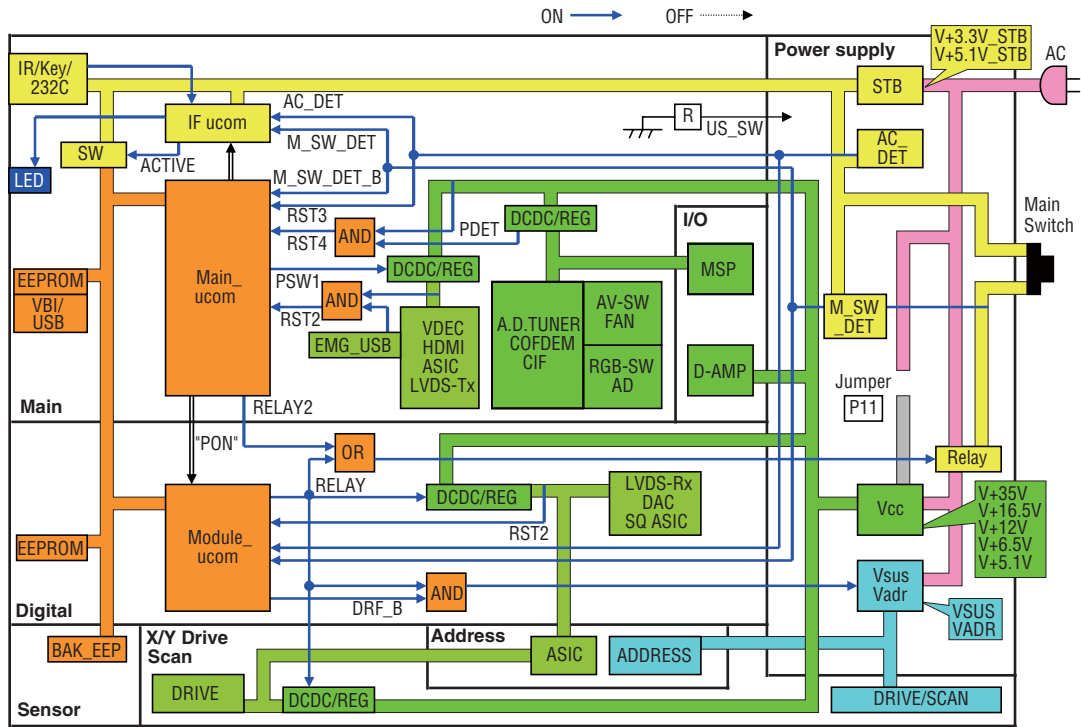
Power supply status - ON

Microcomputer
output port state

IF: ACTIVE	ON
Main: RELAY2	ON
Main: PSW1	ON
Module: RELAY	ON
Module: DRF_B	ON

Microcomputer
input port state

Main: RST4	ON
Main: RST2	ON
Module: RST2	ON

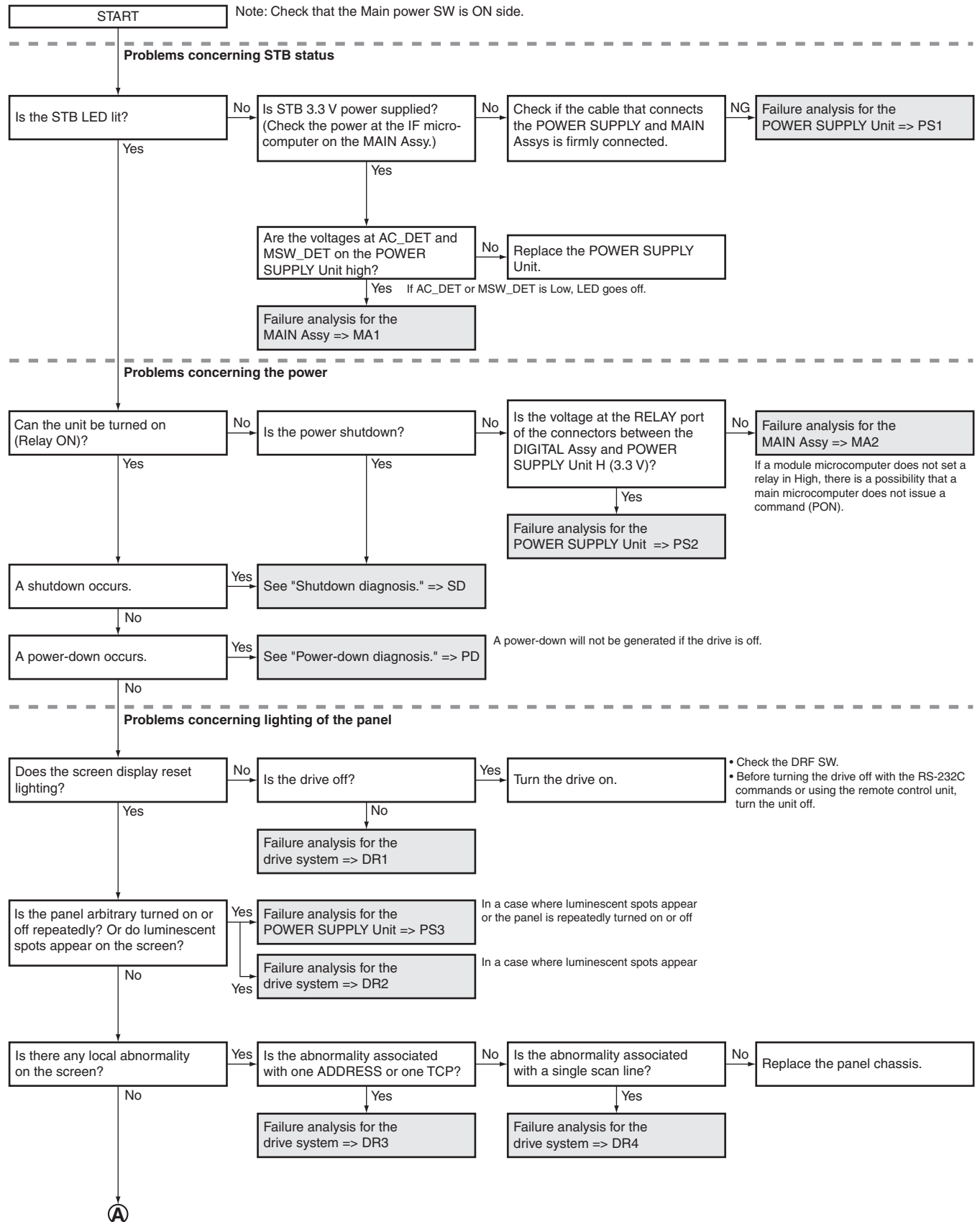


A state when it displays a picture on the PDP. (Blue LED: ON)
All devices are electrified.

5.2 DIAGNOSIS FLOWCHART OF FAILURE ANALYSIS

5.2.1 WHOLE UNIT

Flowchart of Failure Analysis for The Whole Unit

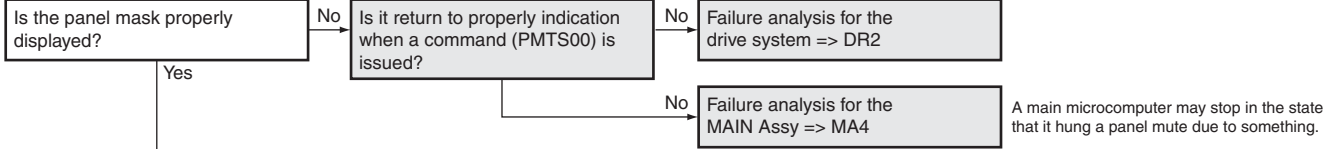


A

A

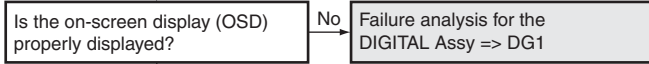
In the subsequent diagnostic steps, it is most likely that the multi base section is in failure.

Problems concerning video display

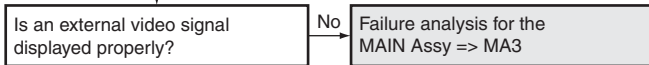


B

Check with the animated slanting ramp mask.

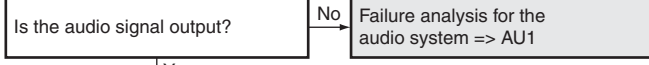


Check on the Factory menu.



Problems concerning the audio output

C



Specific failure whose cause is difficult to identify in the initial stage

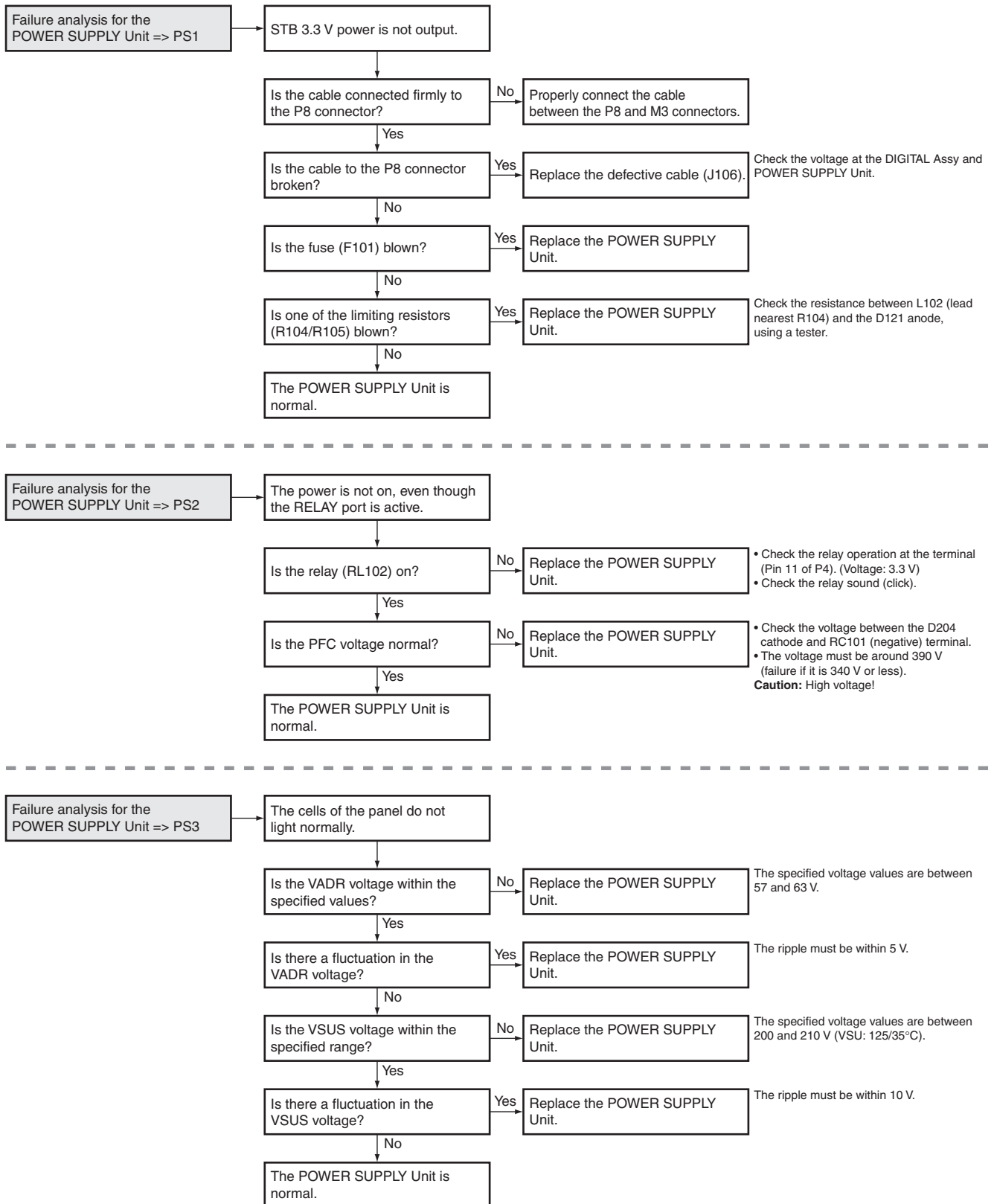
D

E

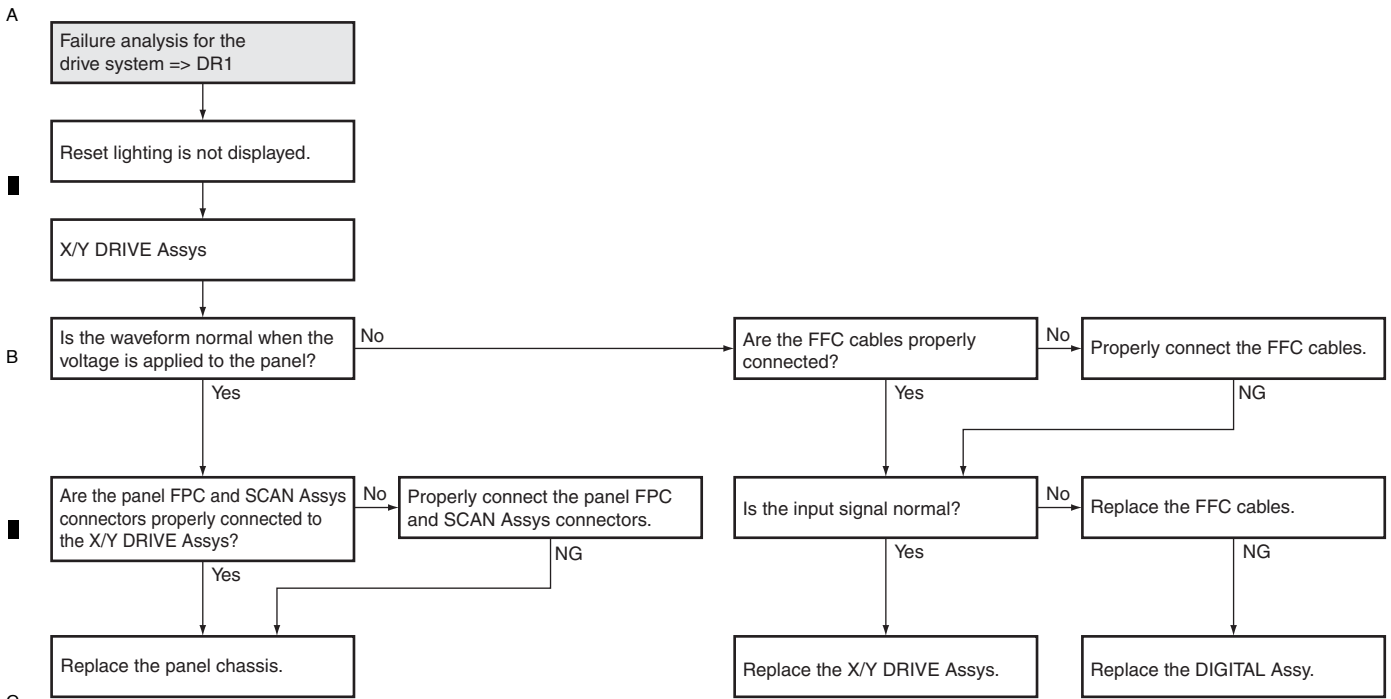
F

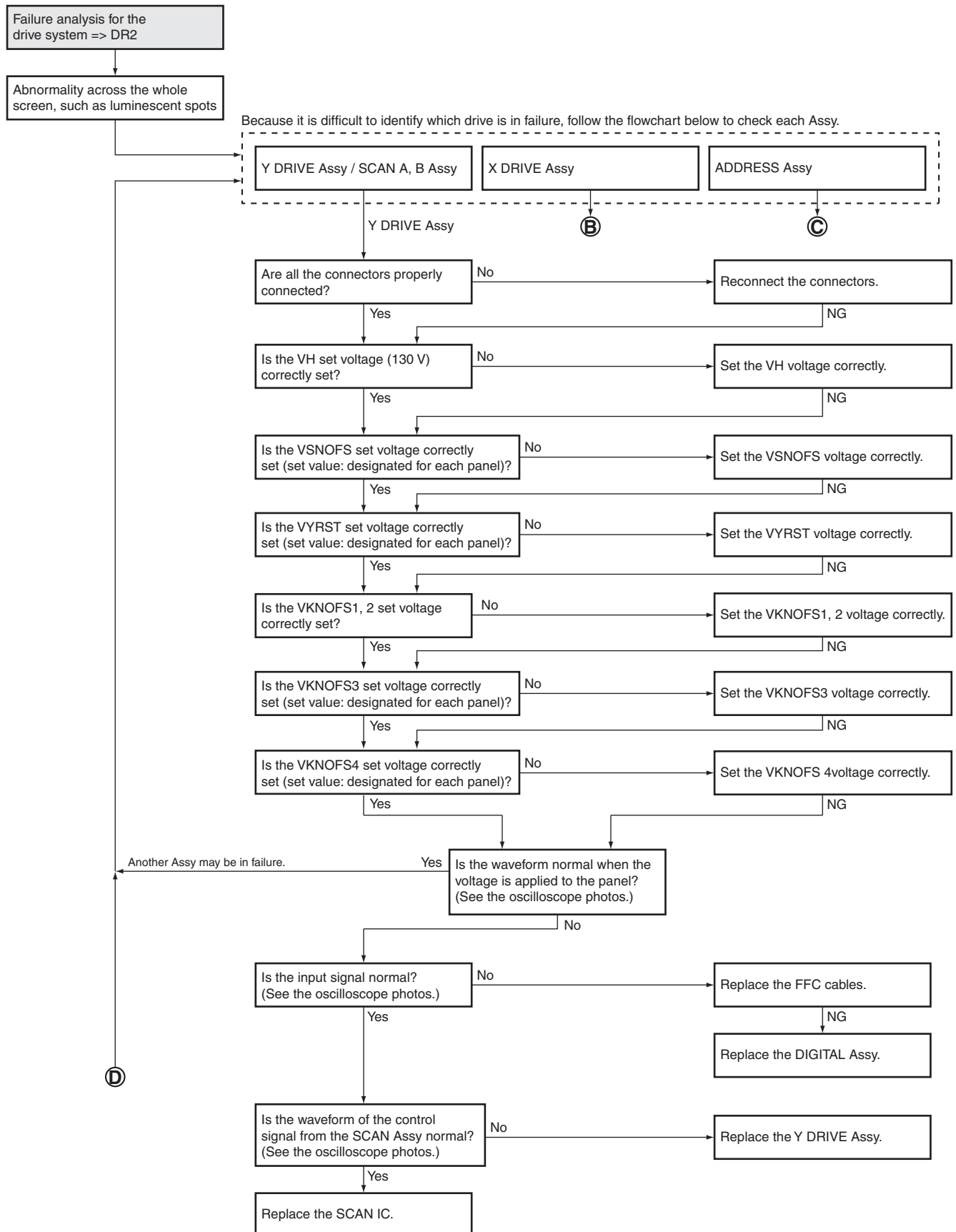
5.2.2 POWER SUPPLY UNIT

Flowchart of Failure Analysis for The POWER SUPPLY Unit



Flowchart of Failure Analysis for The Drive Assy





A

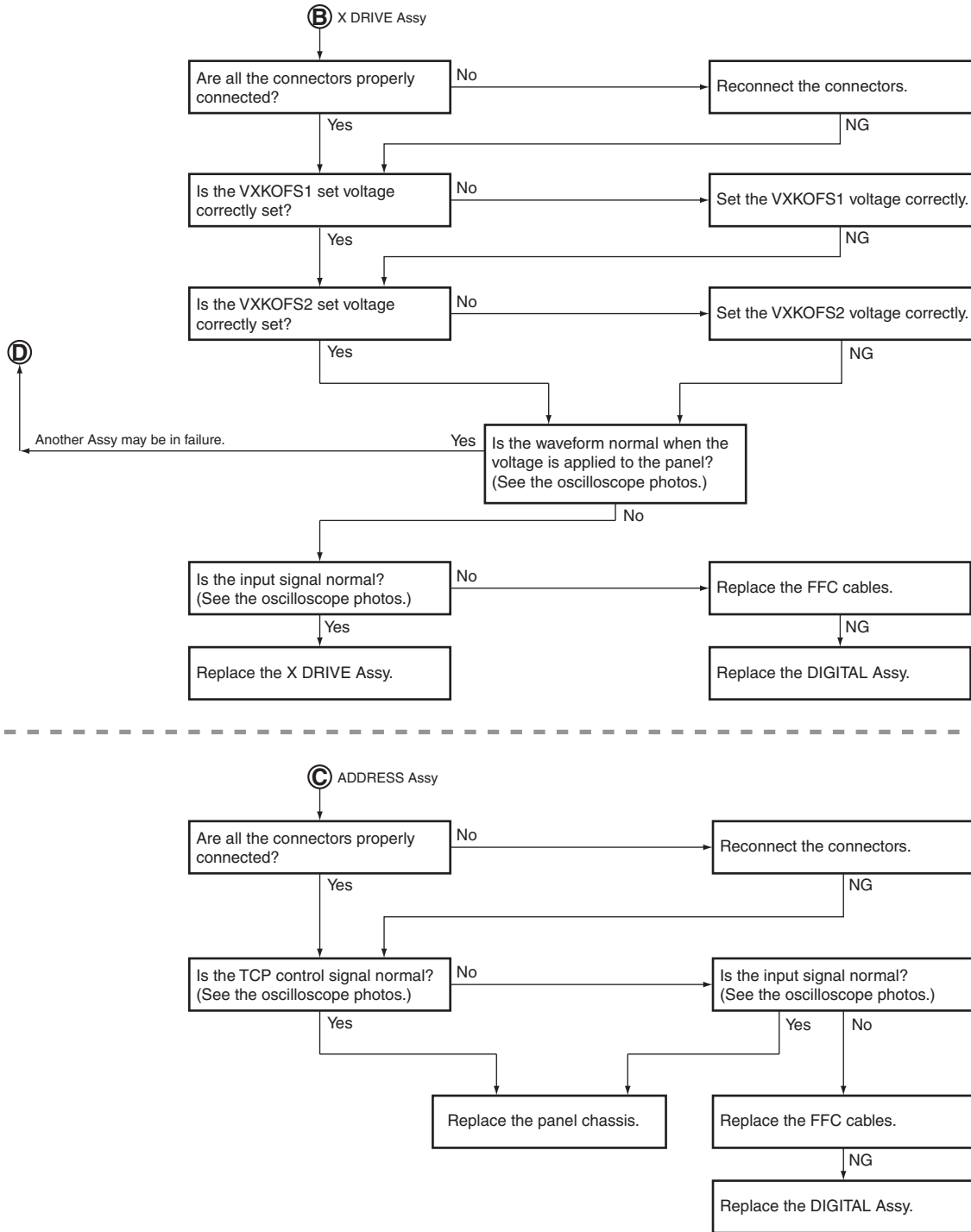
B

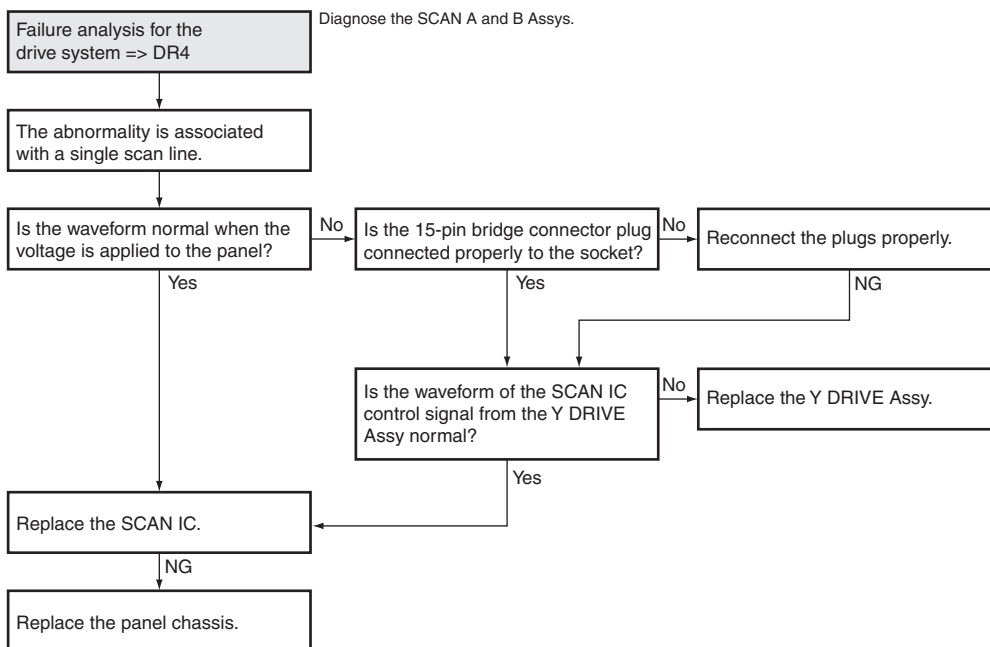
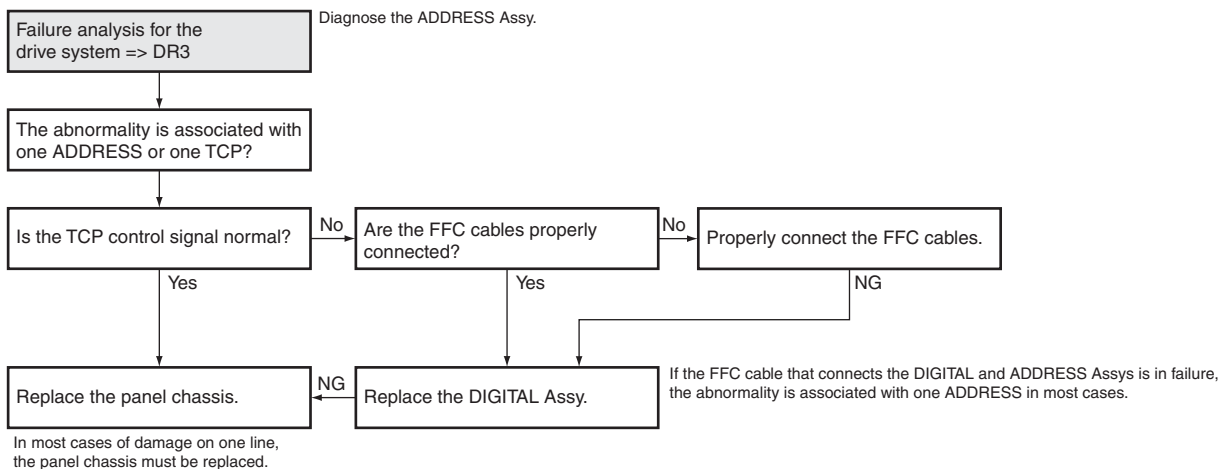
C

D

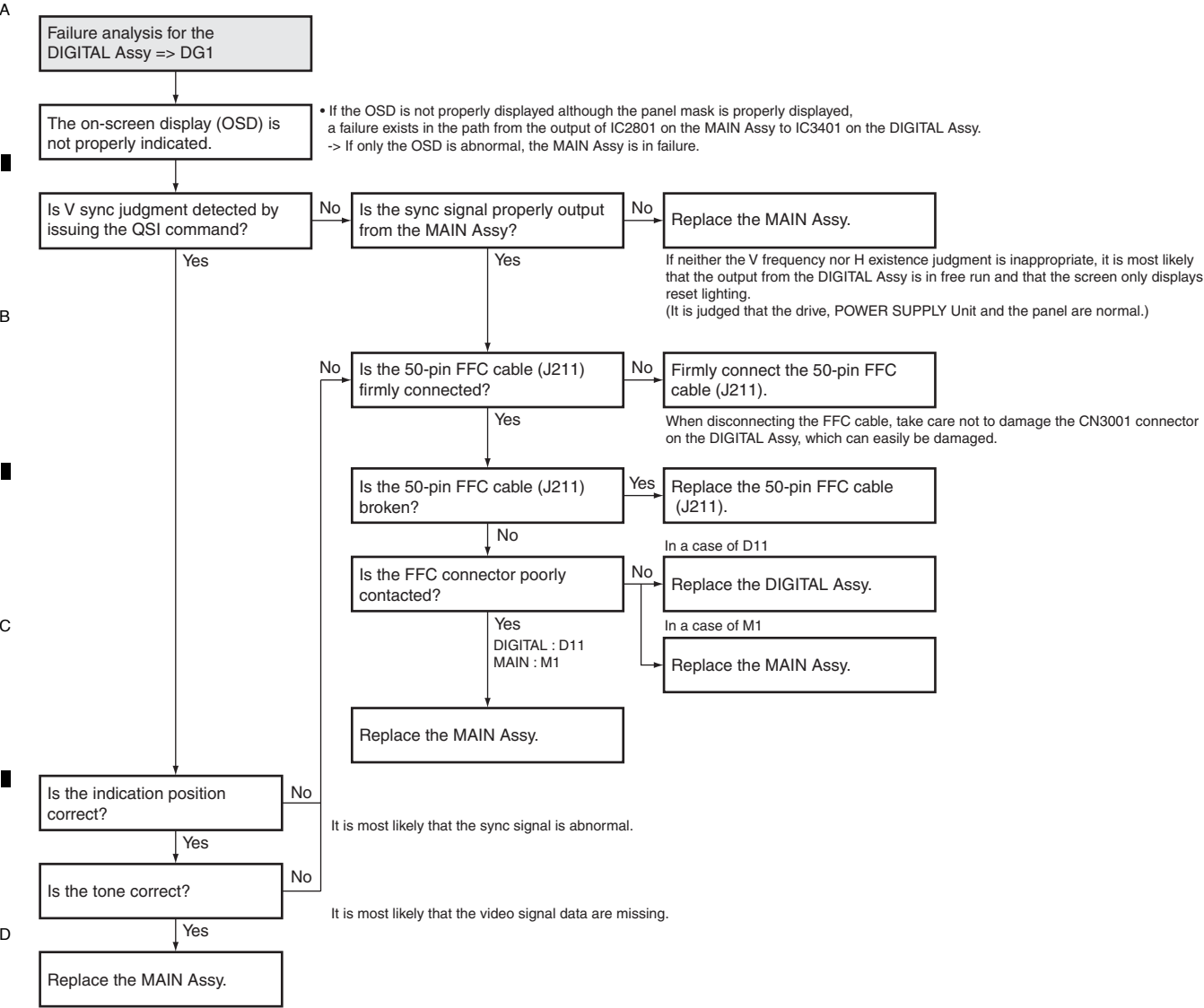
E

F

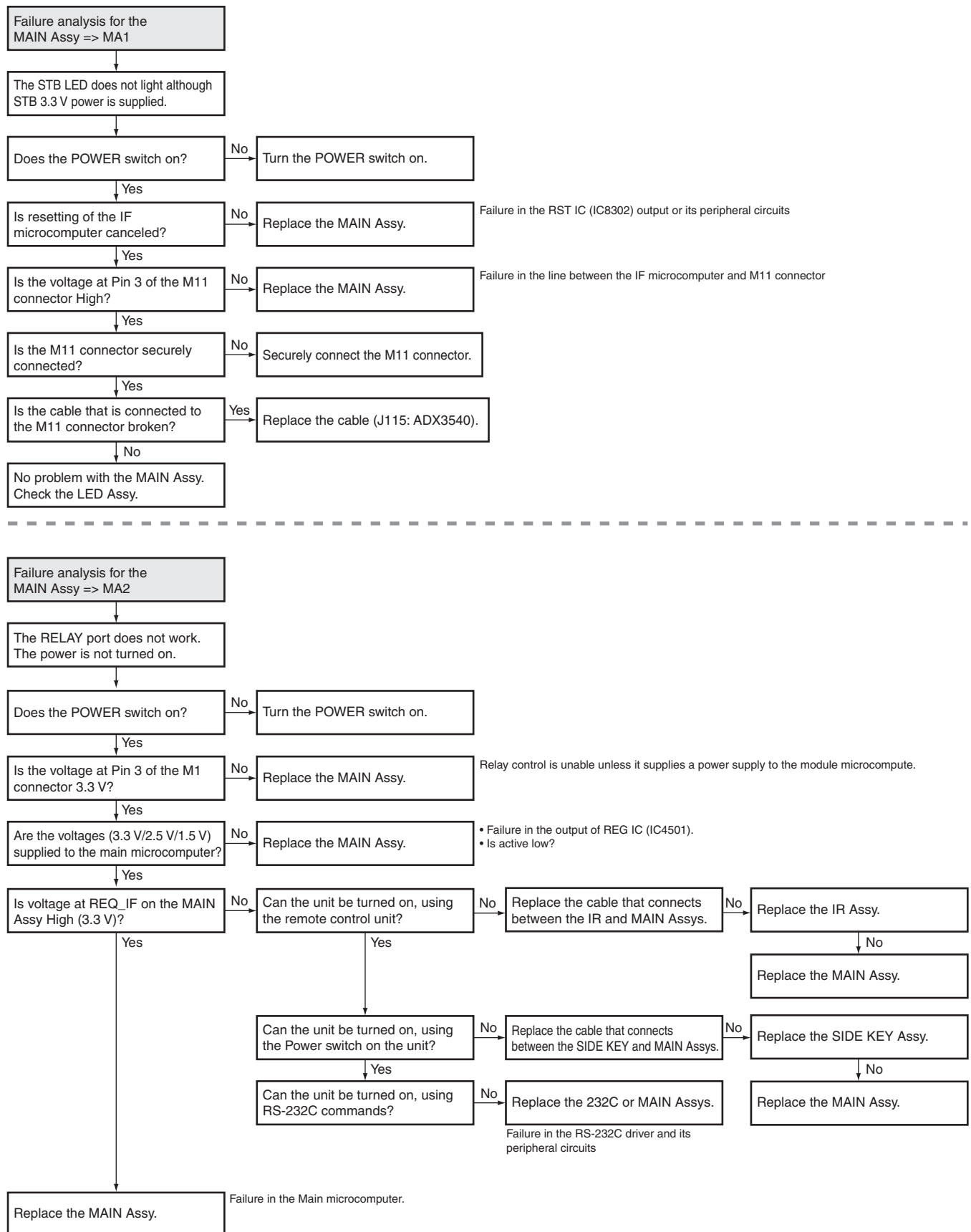




Flowchart of Failure Analysis for The DIGITAL Assy

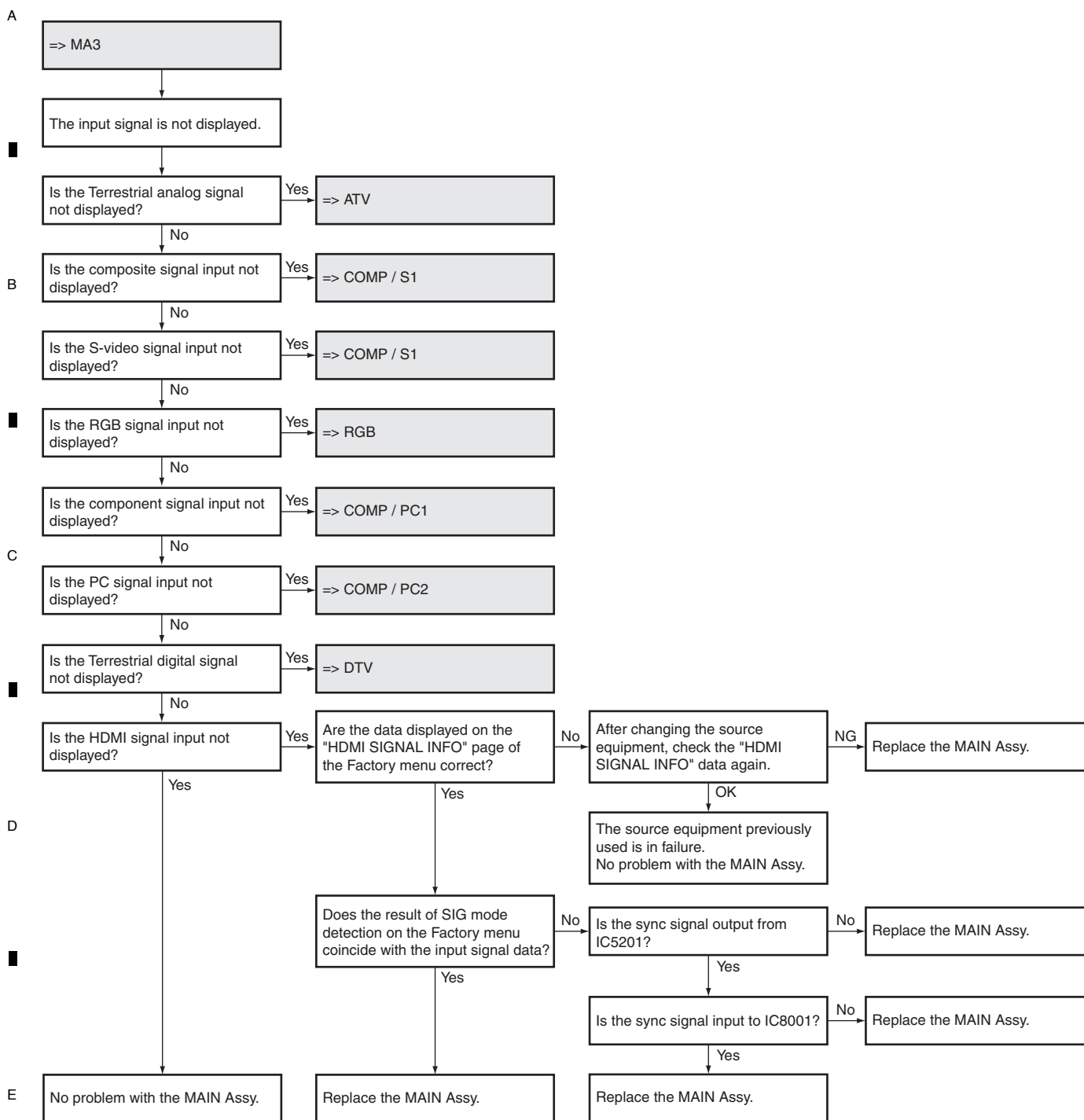


Flowchart of Failure Analysis for The MAIN Assy

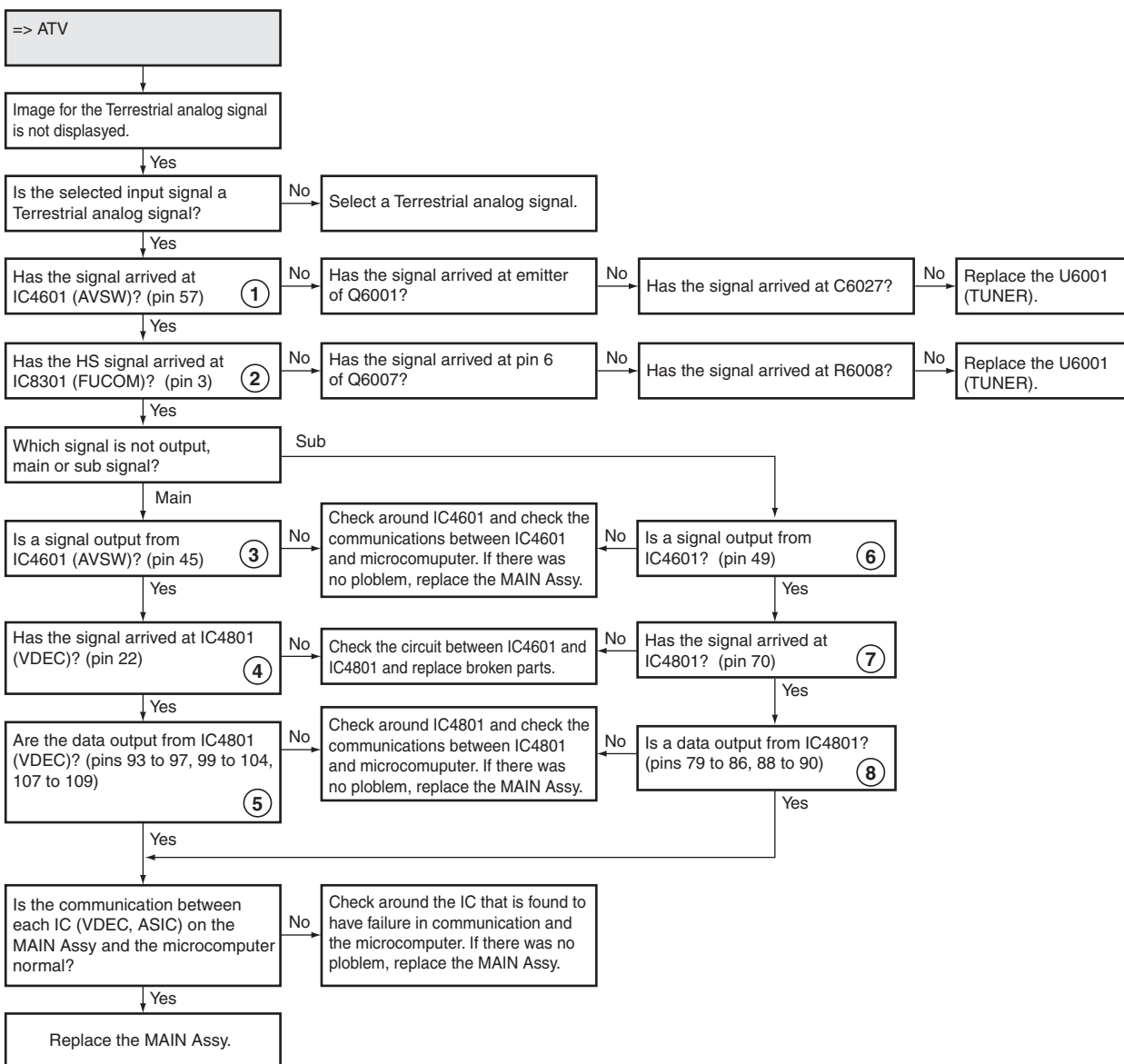


5.2.6 VIDEO SYSTEM

Flowchart of Failure Analysis for The Video System

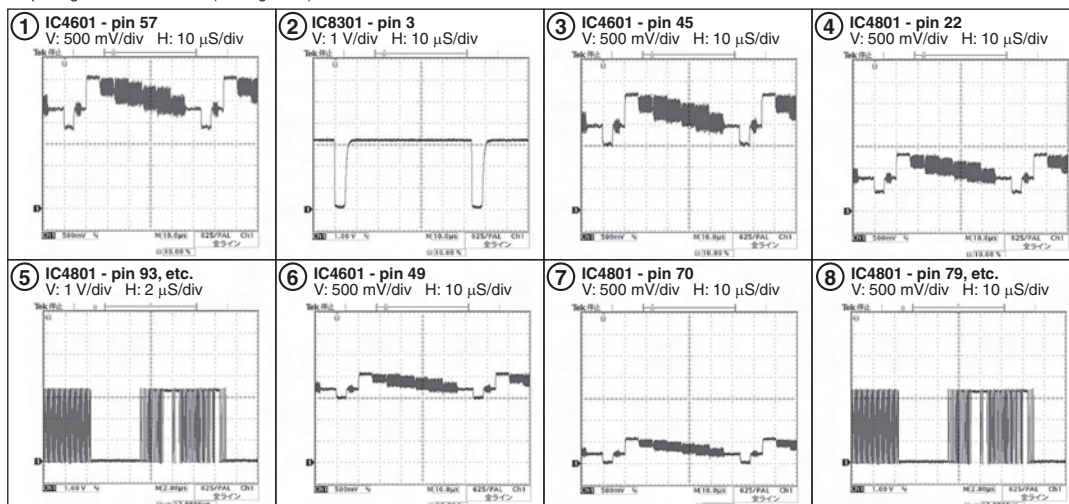


Flowchart of Failure Analysis for The Video System



Waveforms

Input signal: PAL Color-bar (Analog tuner)



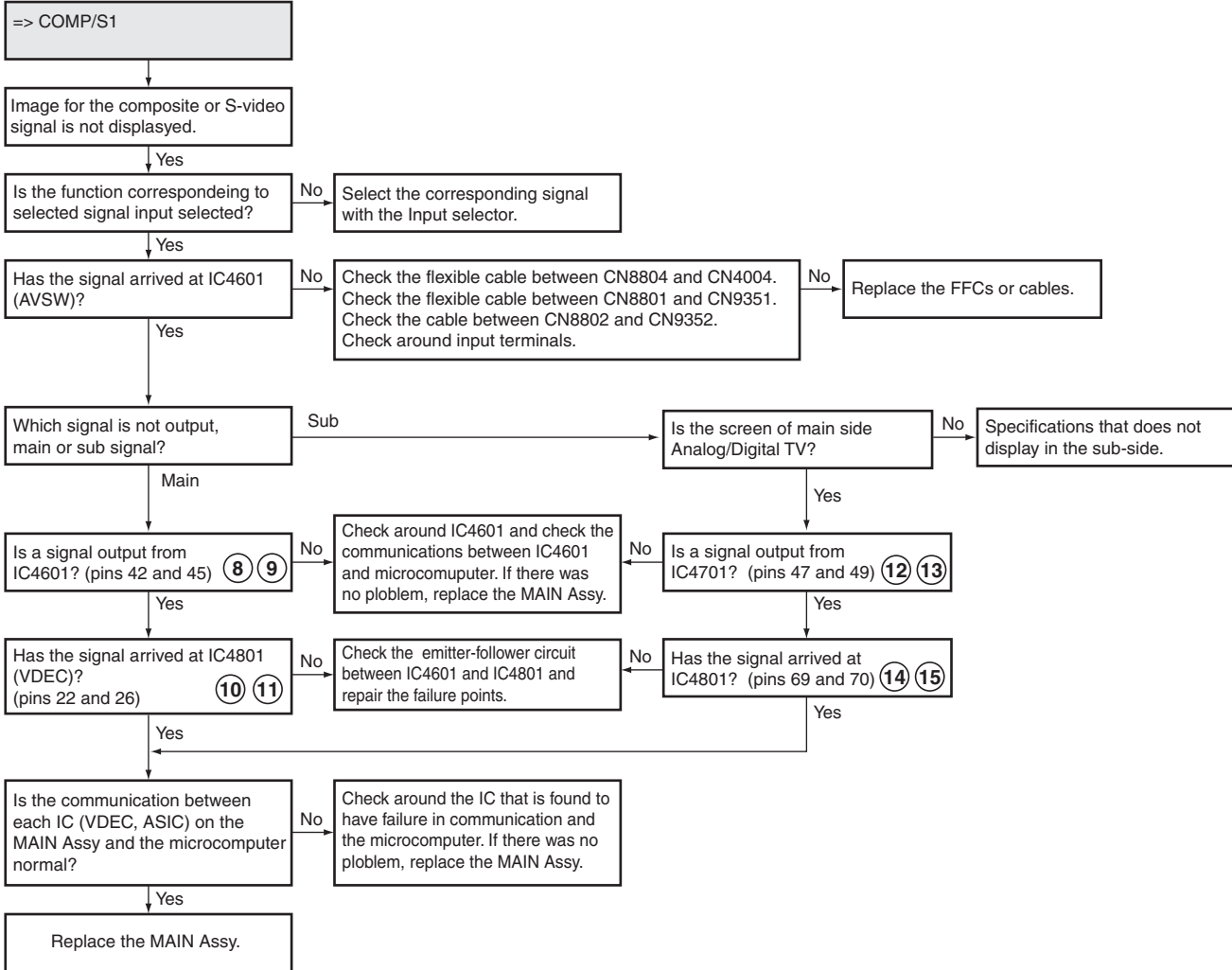
A

Flowchart of Failure Analysis for The Video System

B

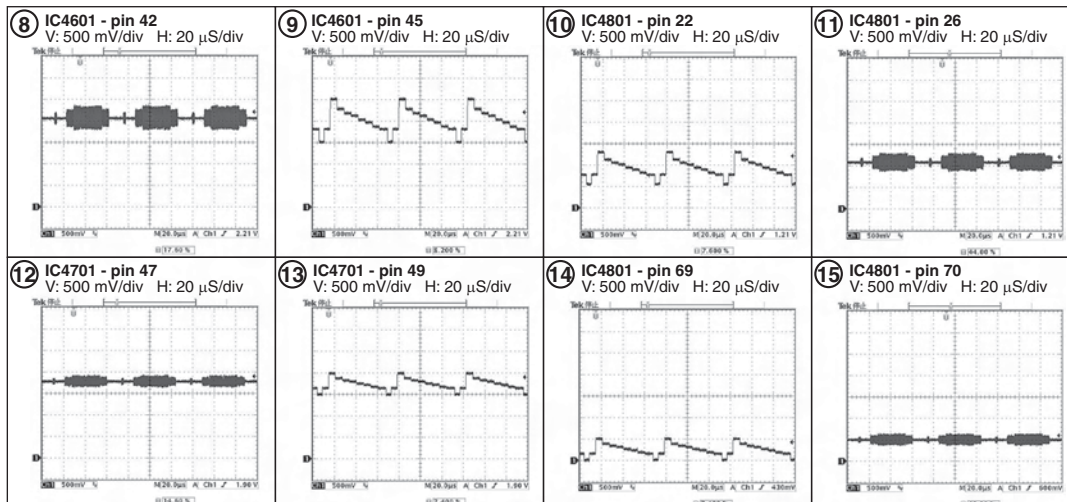
C

D

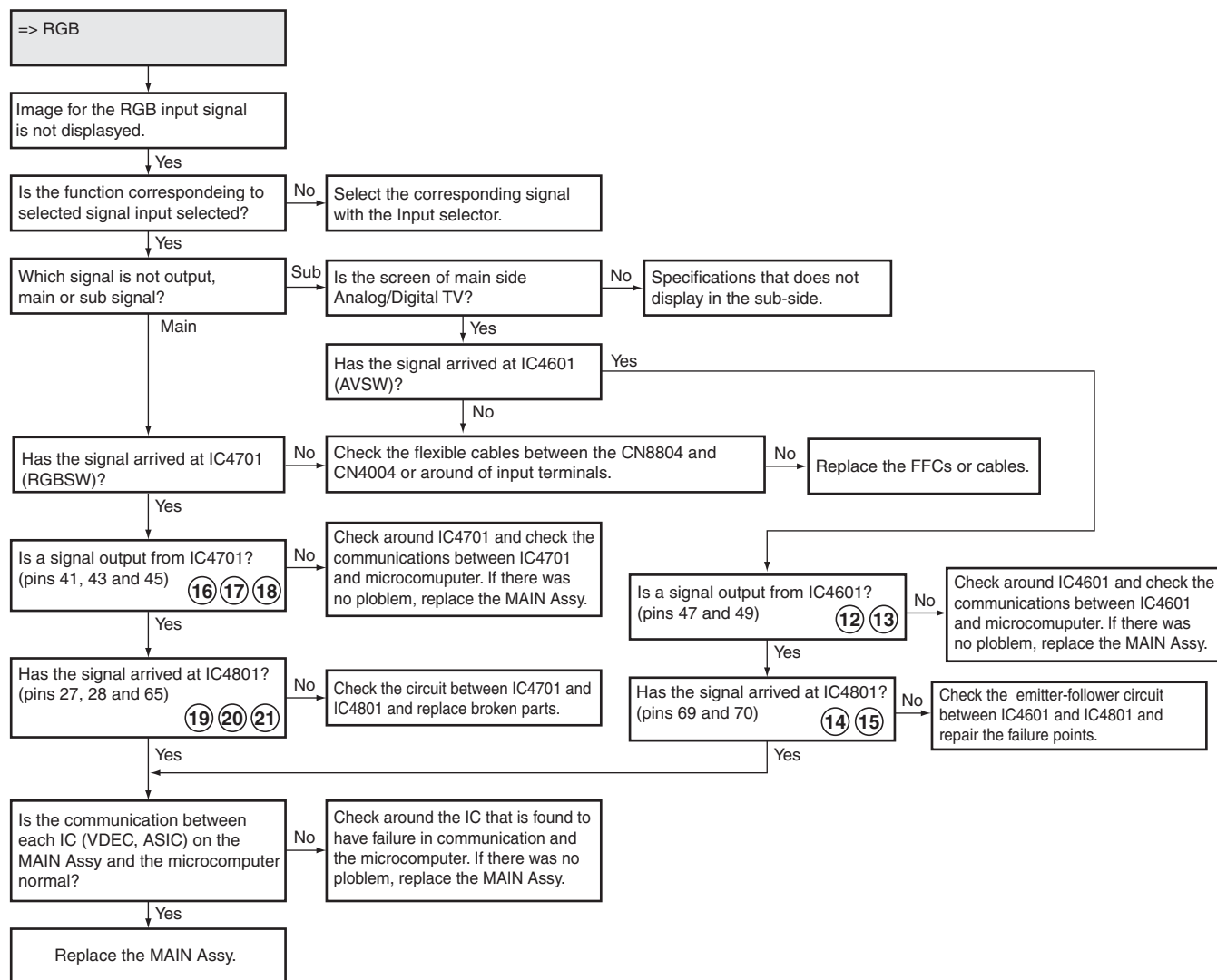


Waveforms

Input signal: PAL Color-bar (S terminal)

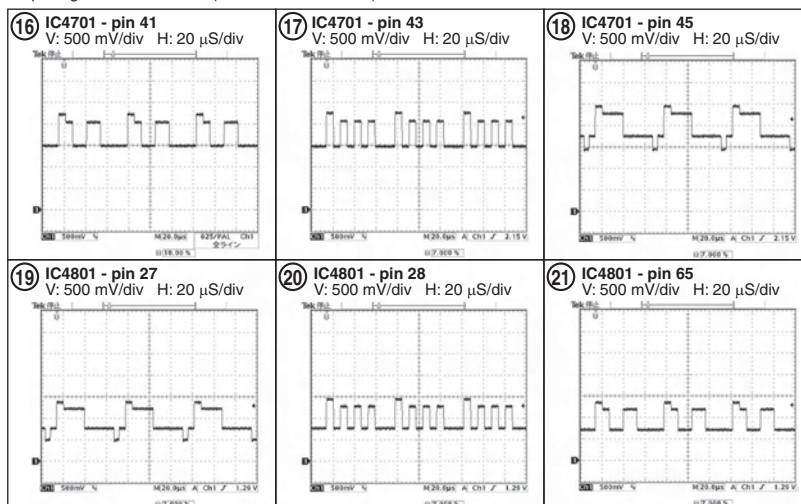


Flowchart of Failure Analysis for The Video System



Waveforms

Input signal: PAL Color-bar (SCART RGB terminal)



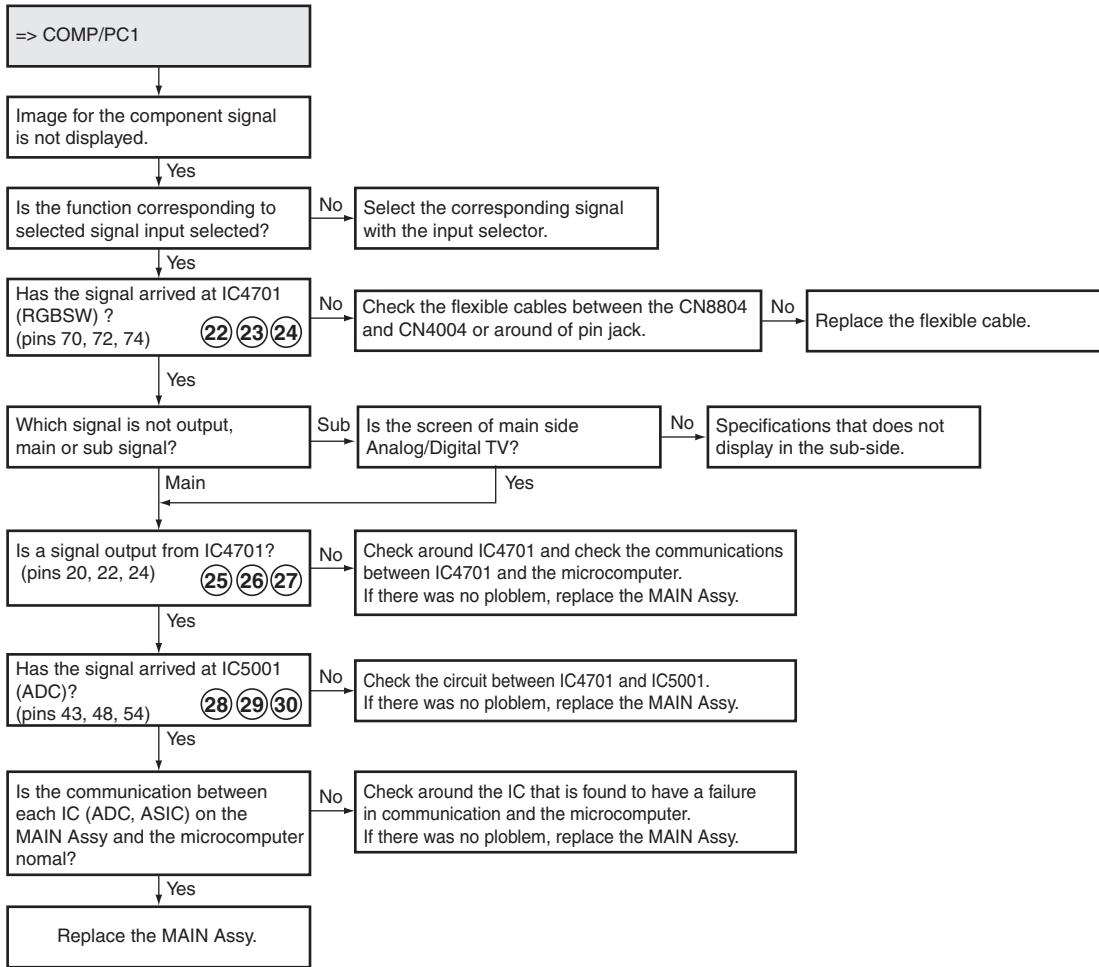
A

Flowchart of Failure Analysis for The Video System

B

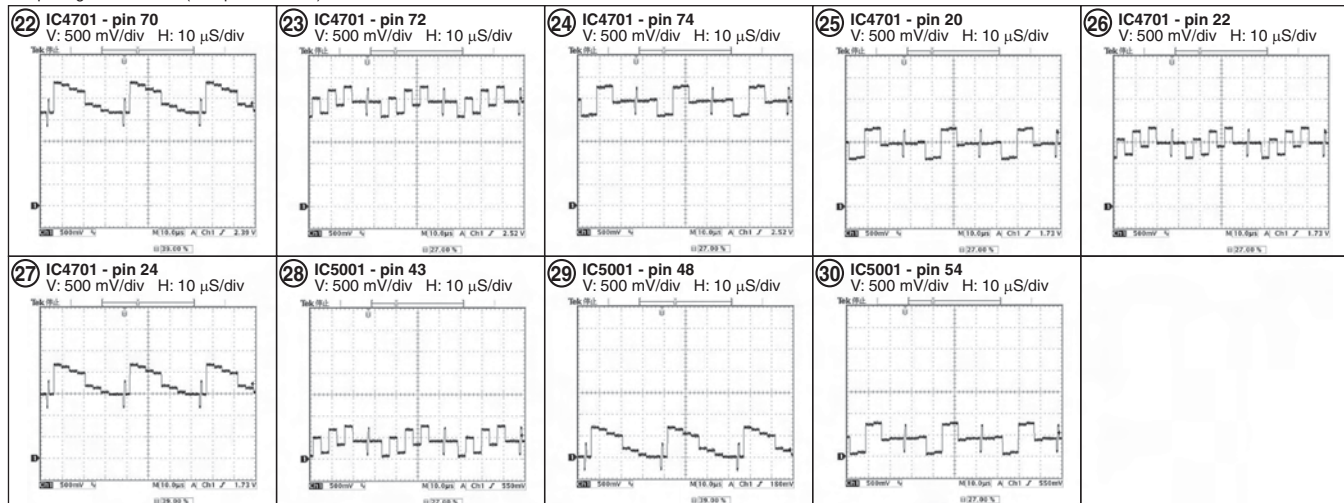
C

D



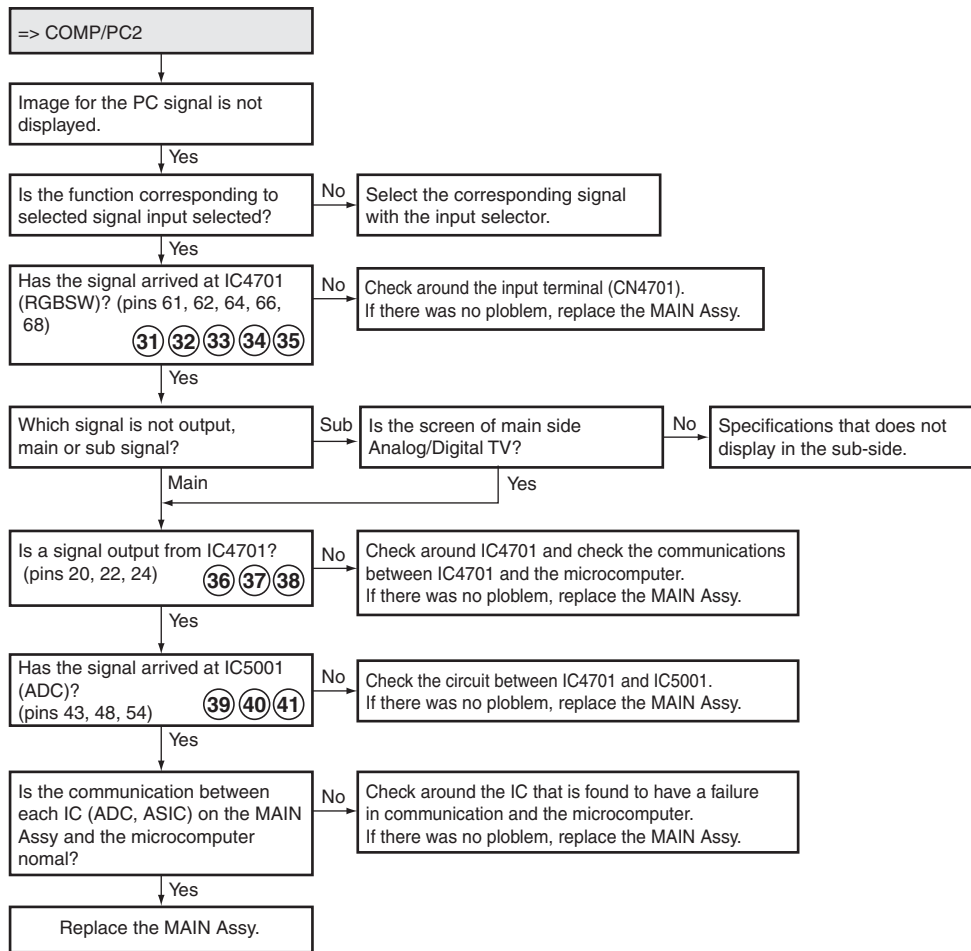
Waveforms

Input signal: Color-bar (Component 1080i)



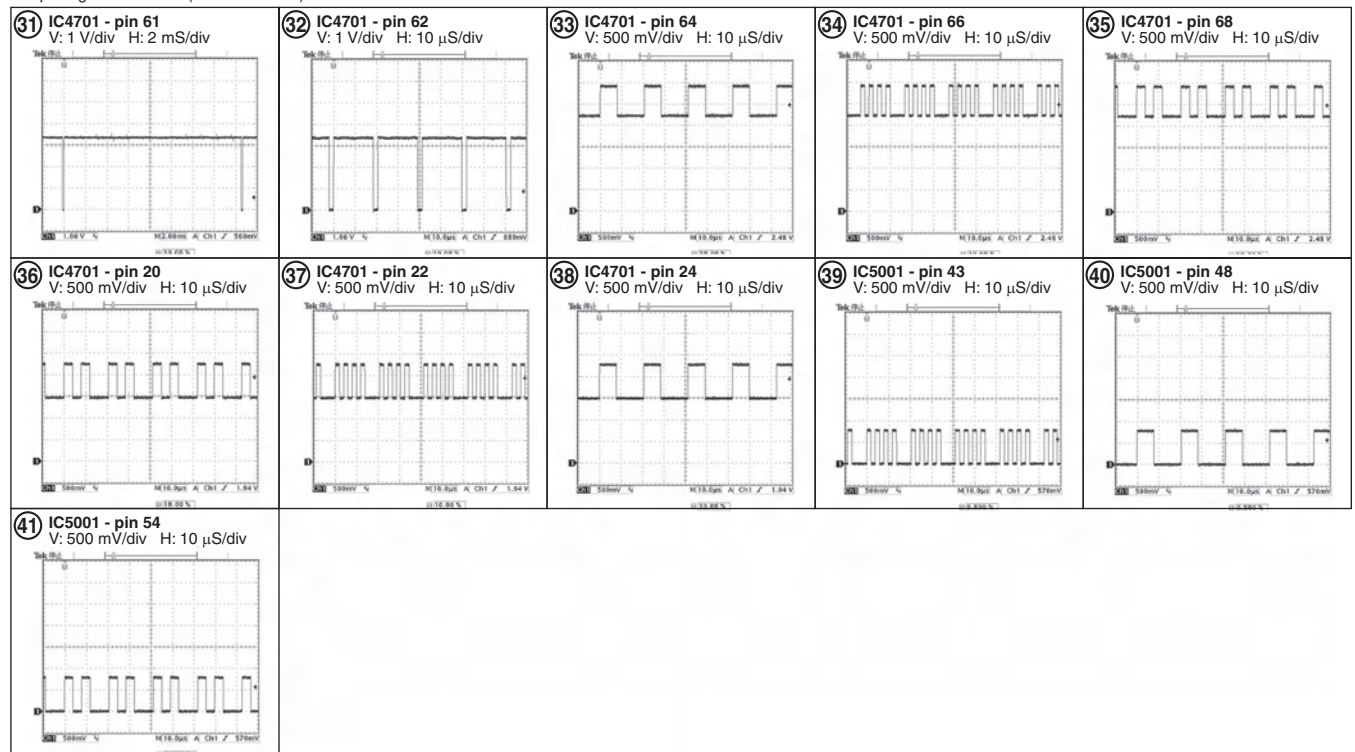
F

Flowchart of Failure Analysis for The Video System



Waveforms

Input signal: Color-bar (PC XGA/60 Hz)



A

Flowchart of Failure Analysis for The Video System

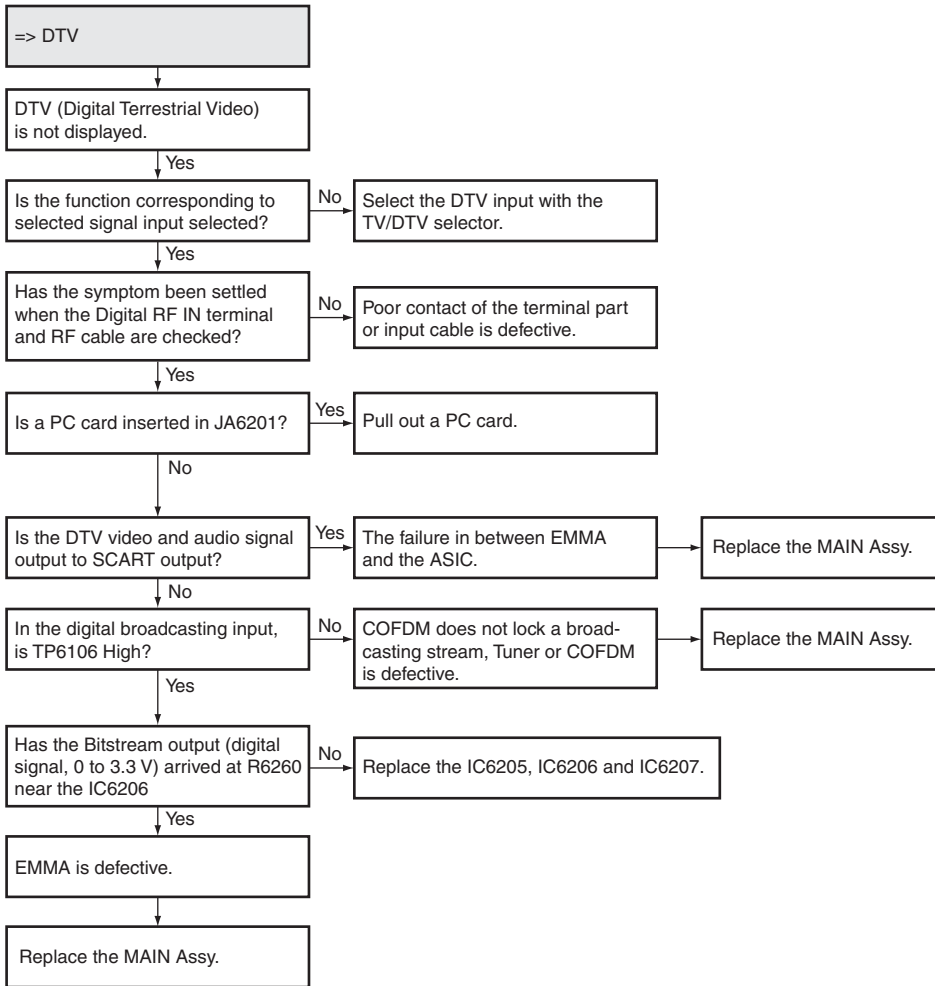
B

C

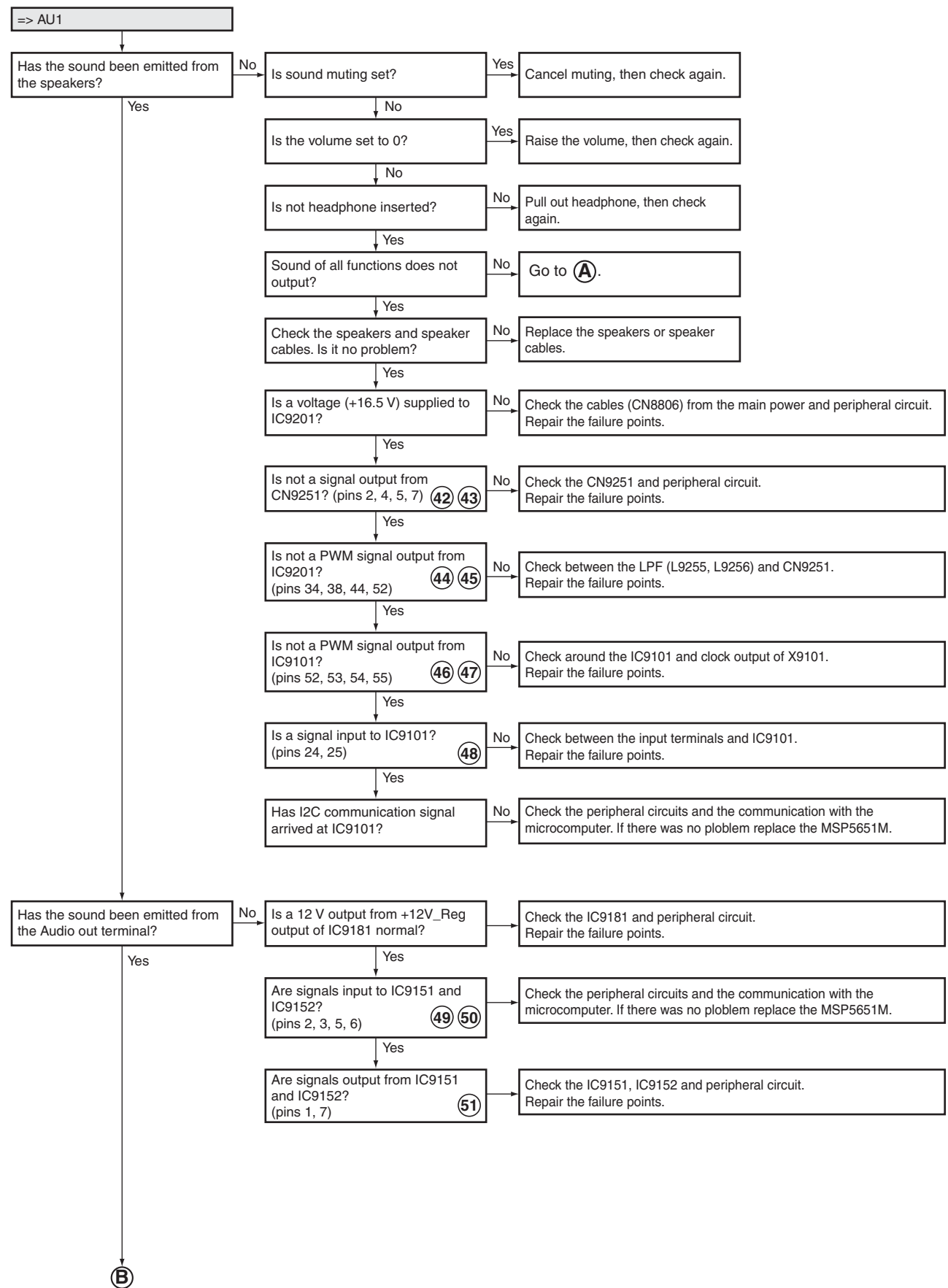
D

E

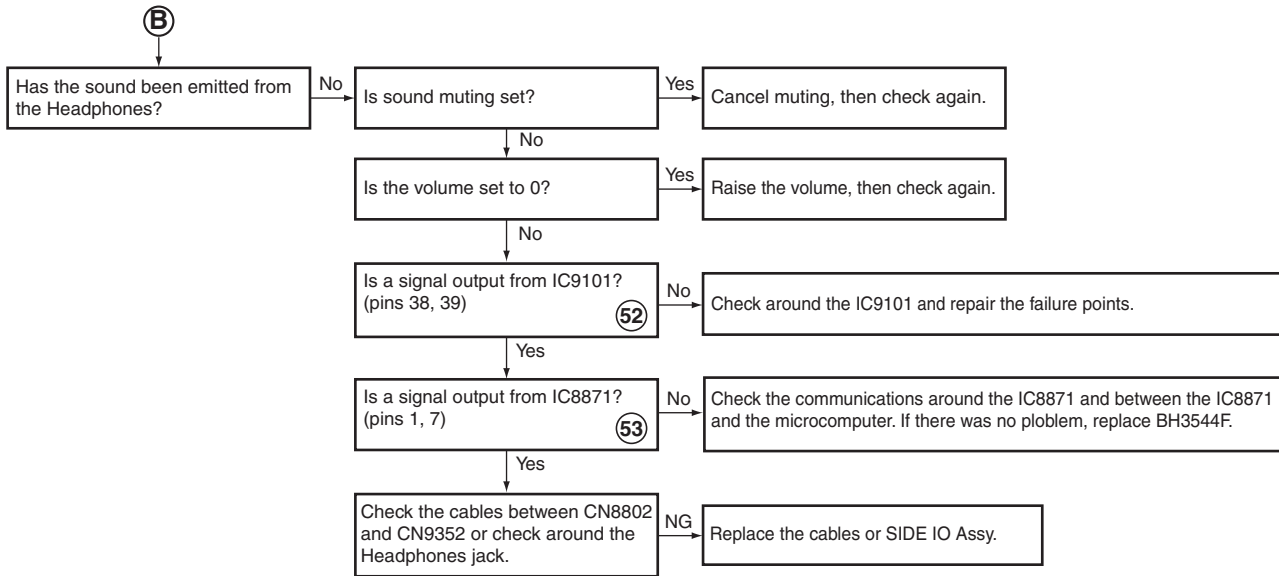
F



Flowchart of Failure Analysis for The Audio System



A

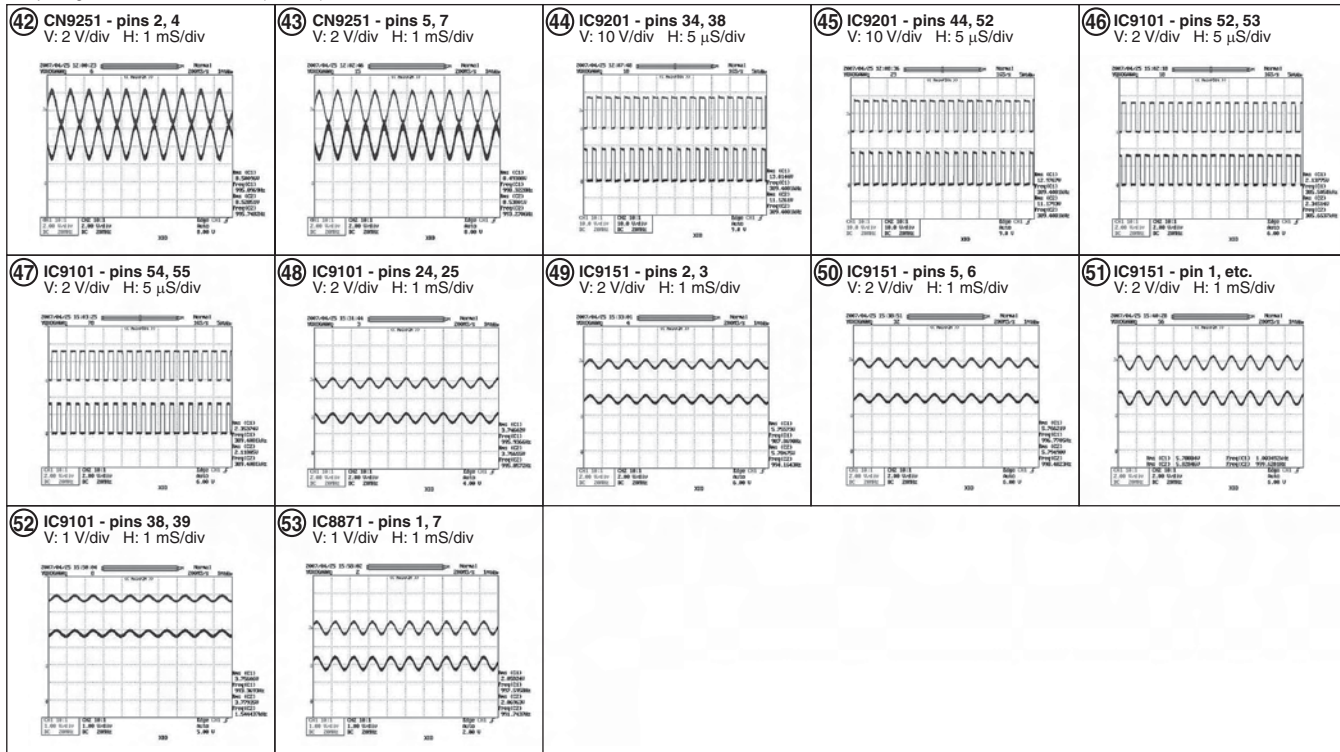


B

C

Waveforms

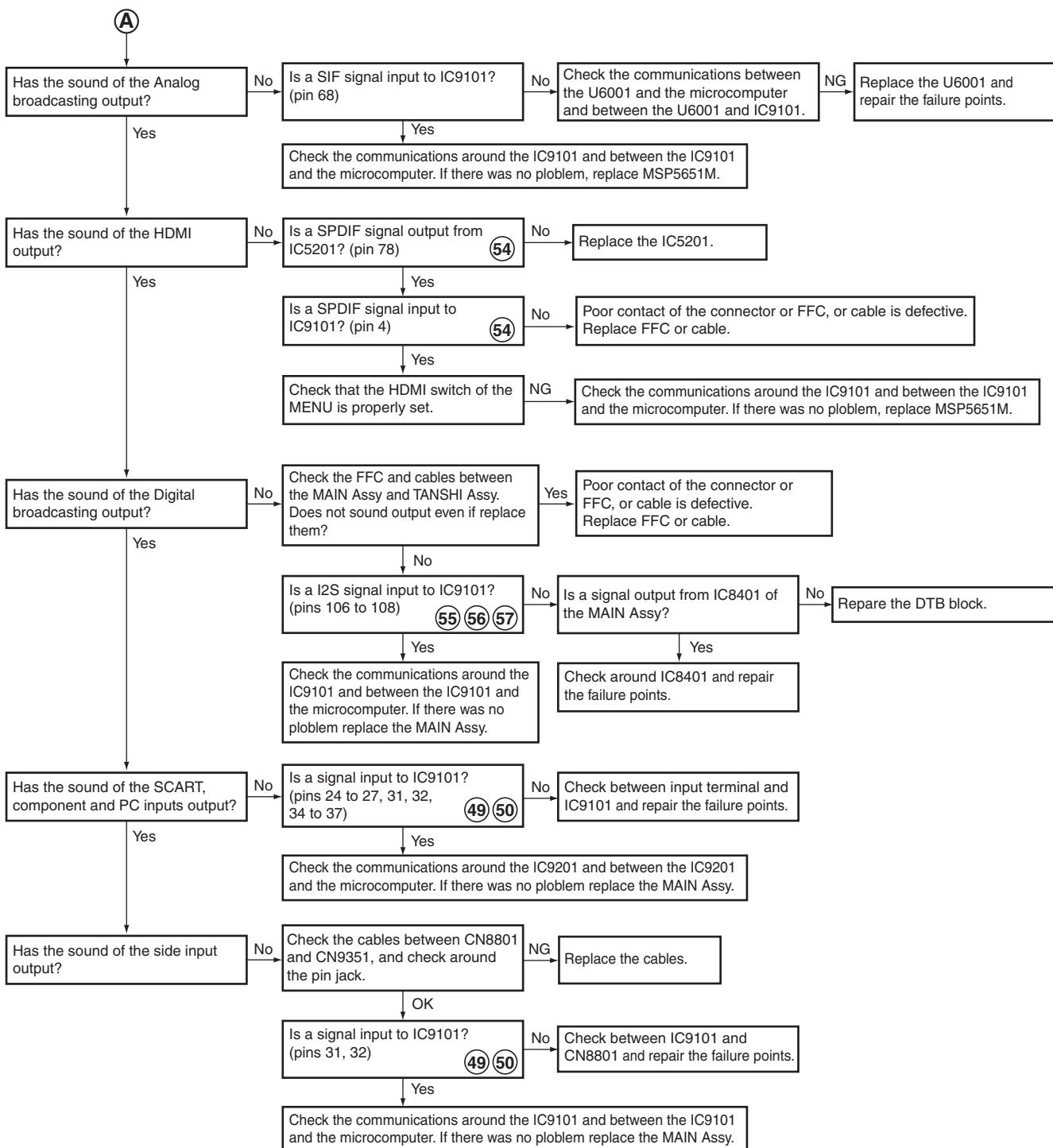
Input signal: L/R 1 kHz, 0.5 Vrms (VOL 30)



D

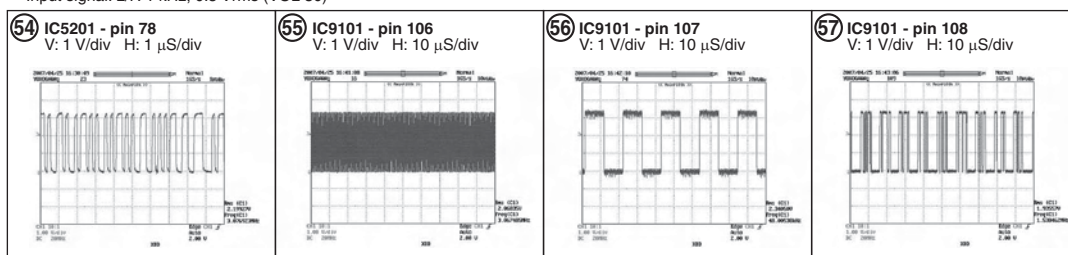
E

F



● Waveforms

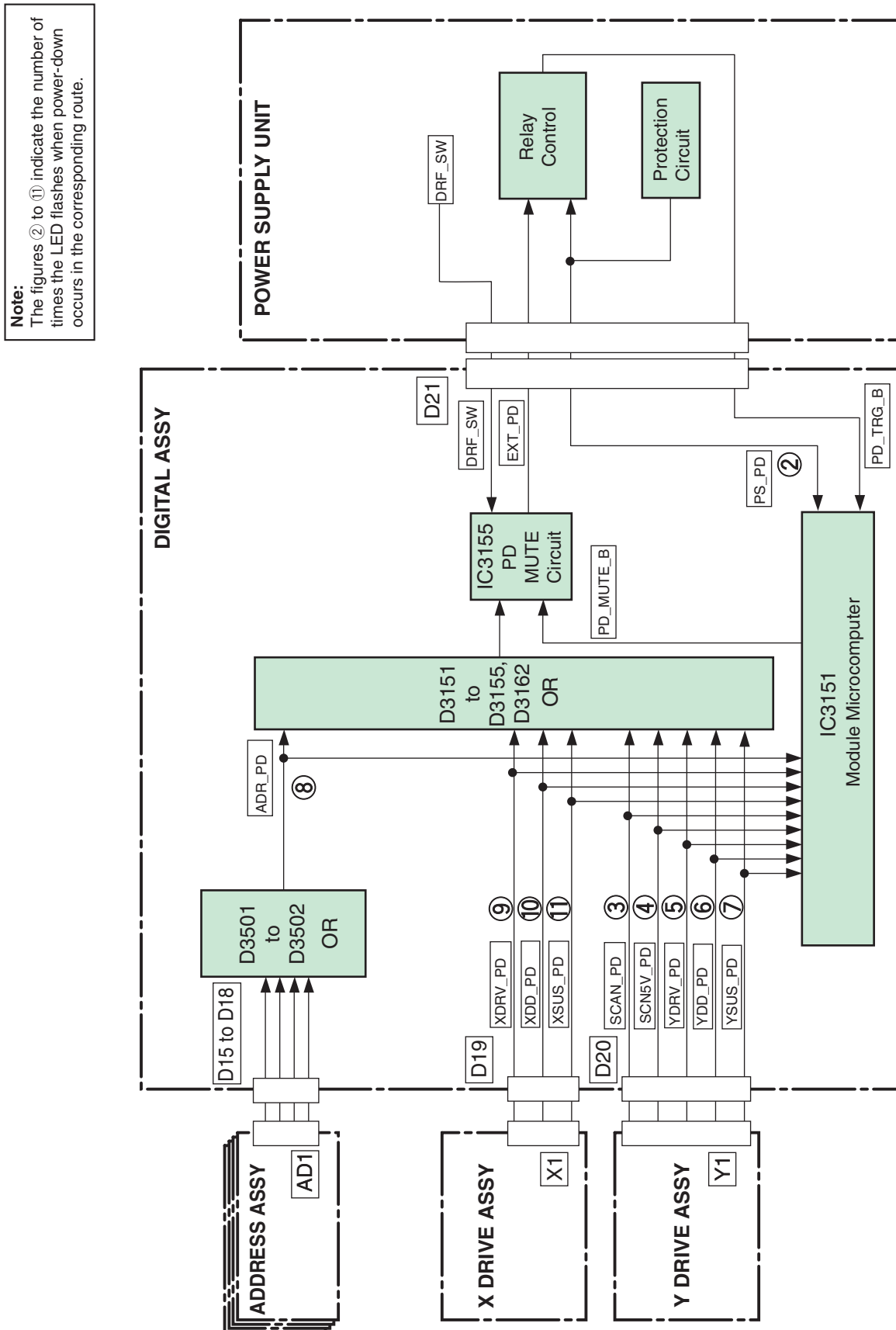
Input signal: L/R 1 kHz, 0.5 Vrms (VOL 30)



5.3.1 BLOCK DIAGRAM OF THE POWER-DOWN SIGNAL

5.3.1 BLOCK DIAGRAM OF THE POWER-DOWN SIGNAL

■ Block Diagram of the Power-Down Signal



5.3.2 PD (POWER-DOWN) DIAGNOSIS OF FAILURE ANALYSIS

Prediction of failure symptoms when a PD (power-down) is generated

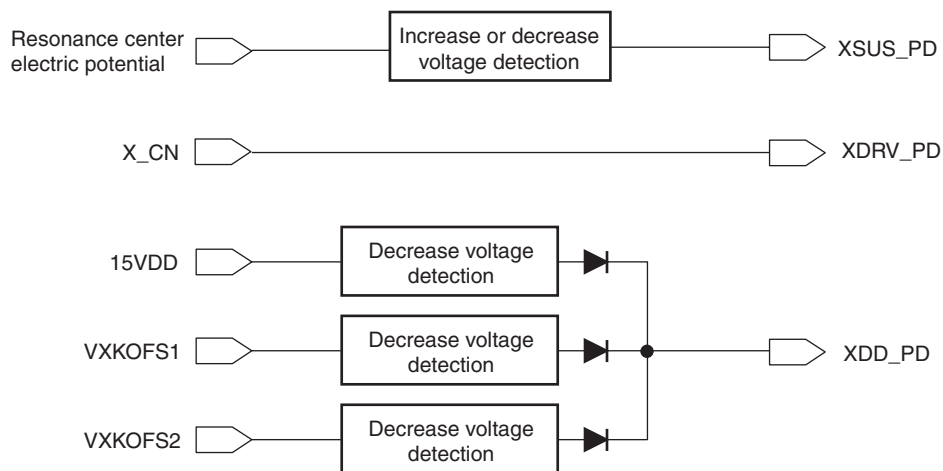
Red LED Flashing Count	Operating PD	Defective Assy	PD Outline	Checkpoint	Possible Defective Part	Remarks
2	POWER	POWER SUPPLY Unit	Failure in the POWER SUPPLY Unit			
		X DRIVE Assy	VSUS UVP	X SUS BLOCK	Q1219,Q1220,Q1221, Q1222,Q1223,Q1224,Q1201	VSUS-PSUS and SUSOUT-SUSGND are short-circuited.
		Y DRIVE Assy		Y SUS BLOCK	Q2217,Q2218,Q2219, Q2221,Q2222,Q2223	VSUS-SUSOUT and SUSOUT-SUSGND are short-circuited.
3	SCAN	SCAN Assy	VH UVP	SCAN IC	SCAN IC	
		X DRIVE Assy		X SUS BLOCK	Q1219,Q1220,Q1221, Q1222,Q1223,Q1224,Q1201	VSUS-PSUS and SUSOUT-SUSGND are short-circuited.
		Y DRIVE Assy		Y SUS BLOCK	Q2217,Q2218,Q2219, Q2221,Q2222,Q2223	VSUS-SUSOUT and SUSOUT-SUSGND are short-circuited.
				VH DC/DC converter	IC2601,D2604	
		DIGITAL Assy	Connectors disconnection detection	CN2001,CN2301 CN3506		
4	SCN-5V	SCAN Assy	IC5V UVP	SCAN IC		
		Y DRIVE Assy	Connectors disconnection detection	IC5V DC/DC CN2501,CN2502	Q2554,D2558	
5	Y-DCDC	Y DRIVE Assy	Connectors disconnection detection	CN2001		
		DIGITAL Assy		CN3506		
6	Y-DCDC	Y DRIVE Assy	VNOFS UVP	Y MSK BLOCK	Q2320,Q2321,Q2322,Q2323, Q2324,Q2325,Q2330,Q2332, Q2334	LMSK is short-circuited.
				VNOFS DC/DC	D2606,Q2710,Q2711	
			Vprst UVP	YPRST Regulator	D2602,Q2604,R2610	
			15VDD UVP	15VDC/DC	Q2572	
				VKOFS1_2 UVP	Y MSK BLOCK	Q2320,Q2321,Q2322,Q2323, Q2324,Q2325,Q2330,Q2332, Q2334
			VKOFS1_2 Regulator		Q2705,Q2702	
			VKOFS3 UVP	Y MSK BLOCK	Q2320,Q2321,Q2322,Q2323, Q2324,Q2325,Q2330,Q2332, Q2334	LMSK is short-circuited.
				VKOFS3 Regulator	Q2706,Q2703	
			VKOFS4 UVP	Y MSK BLOCK	Q2320,Q2321,Q2322,Q2323, Q2324,Q2325,Q2330,Q2332, Q2334	LMSK is short-circuited.
				VKOFS4 Regulator	Q2707,Q2704	
7	Y-SUS	Y DRIVE Assy	Center electric potential detection PD	Y RESONANCE BLOCK	Q2106,Q2107,Q2108,Q2110,Q2112, D2104,D2105,D2108,D2109	
8	ADRS	ADDRESS Assy	Vadr LVP	ADDRESS RESONACE BLOCK	IC1551,IC1552,IC1553,IC1554	Vadr is short-circuited (TCP,etc.). Each TCP unit.
					Q1631,Q1641,Q1651,Q1661, (D1631,D1641,D1651,D1661,R1614, R1615,R1616,R1617)	Between ADR_B and Vadr is short-circuited. Each resonance block unit.
					C1611,(R1614,R1615,R1616,R1617, R1635,R1645,R1965,R1665,D1631, D1641,D1651,D1661,Q1610)	ADR_B capacitor is short-circuited.
		DIGITAL Assy	Connectors disconnection detection	CN1501,CN1502		
				CN3501 to CN3504		
				CN1202,CN1203		
X DRIVE Assy		CN2302,CN2303,CN2304				
9	XDRIVE	X DRIVE Assy	Connectors disconnection detection	CN1001		
		DIGITAL Assy		CN3505		
10	X-DCDC	X DRIVE Assy	Connectors disconnection detection	CN1201		
			15VDD UVP	X SUS BLOCK	L1201,R1217	
				15VDC/DC	Q1402	
			VXKOFs1 UVP	VXKOFs1 Regulator	Q1403,Q1404,IC1401	
				X OFFSET BLOCK	Q1301,Q1303	
VXKOFs2 UVP	VXKOFs2 Regulator	Q1405,Q1406,IC1402				
X OFFSET BLOCK	Q1302,Q1304					
11	X-SUS	X DRIVE Assy	Center electric potential detection PD	X RESONANCE BLOCK	Q1108,Q1109,Q1110,Q1112, D1106,D1107,D1110,D1111	

UVP: Under Voltage Protect , OVP: Over Voltage Protect

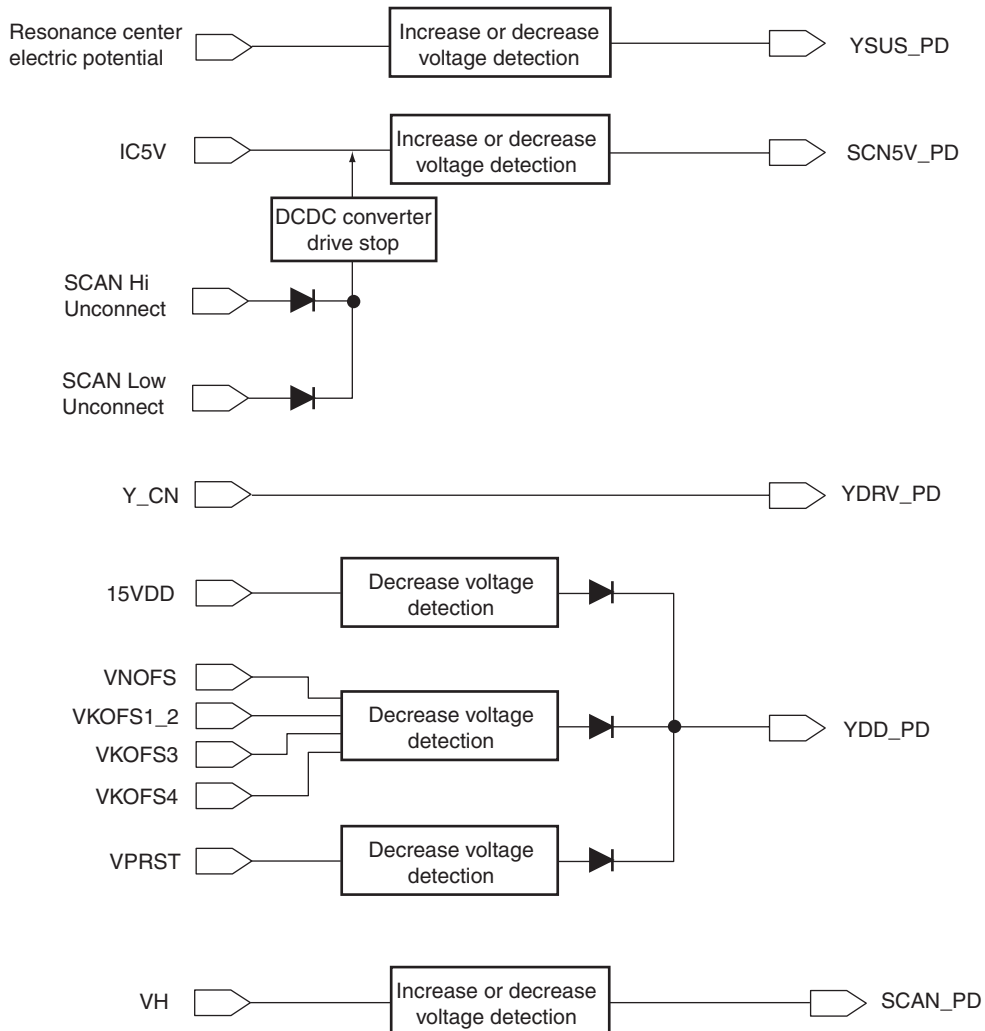
How to distinguish which connector is disconnected

Assy	Connector	To which Assy the Connector is Connected	LED Flashing Count	Screen Display
X DRIVE Assy	CN1001	DIGITAL Assy	5 (XDRIVE)	
	CN1201	POWER SUPPLY Unit (drive system power)	11 (X-SUS)	
	CN1202	POWER SUPPLY Unit (ADR system power)	8 (ADRS)	
	CN1203	ADDRESS Assy	8 (ADRS)	
Y DRIVE Assy	CN2001	DIGITAL Assy	3 (SCAN)	
	CN2301	POWER SUPPLY Unit (drive system power)	3 (SCAN)	
	CN2302	POWER SUPPLY Unit (ADR system power)	8 (ADR)	
	CN2303, CN2304	ADDRESS Assy	8 (ADR)	
	CN2501, CN2502	SCAN A, B Assy	4 (SCN-5V)	
SCAN A, B Assy	CN2801, CN2901	Y DRIVE Assy	4 (SCN-5V)	
ADDRESS Assy	CN1501	DIGITAL Assy	8 (ADRS)	
	CN1502	X DRIVE Assy, Y DRIVE Assy	8 (ADRS)	

X Drive PD system



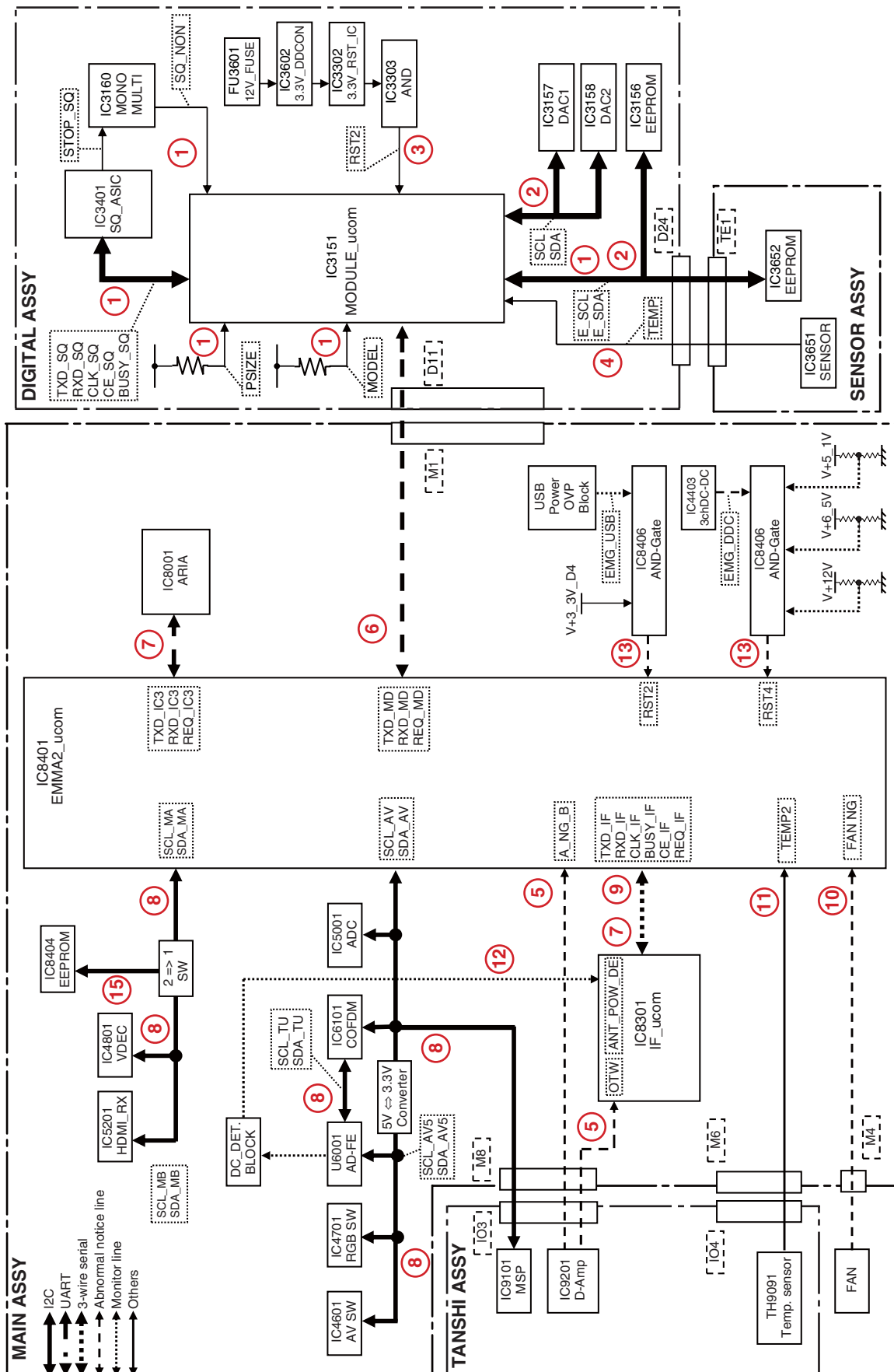
Y Drive PD system



5.4 DIAGNOSIS OF SD (SHUTDOWN)

5.4.1 BLOCK DIAGRAM OF THE SHUTDOWN SIGNAL

■ Block Diagram of the Shutdown Signal



Note : The figures ① to ⑮ indicate the number of times the LED flashes when shut-down occurs in the corresponding route.

5.4.2 SD (SHUTDOWN) DIAGNOSIS

Frequency of LED Flashing	Major Type	Detailed Type	Log Indication in Factory Mode		Checkpoint	Possible Defective Part	Remarks
			MAIN	SUB			
Blue 1	Abnormality in the Sequence LSI	Communication error		RTRY	CLK_SQ/TXD_SQ, etc.	IC3401, IC3151	SQ_IC communication not established. IC3401 may not have properly started up.
		Drive stop	SO-LSI	SONO	Check if the video sync signal is input to IC3401.	CN3001, IC3001, IC3401	A shutdown occurs if IC3401 has not properly started up (a communication failure between IC3401 and IC3001 [FASH]).
		Busy			BUSY_SQ	IC3401, IC3151	If BUSY_SQ remains high, a shutdown is generated.
		Incoherent version (hardware, software)		VER-HS	Check the model number of the DIGITAL Assy and the destination of SEQ-PROG.	IC3306, IC3151	The written SEQ-PROG is incoherent with data on the DIGITAL Assy.
Blue 2	Failure in IIC communication with the module microcomputer	Incoherent version (memory, software)		VER-MS	Check the model number of the DIGITAL Assy and the destination of SEQ-PROG.	IC3306, IC3151	A shutdown occurs if the SEQ-PROG that has been stored in backup memory does not coincide with the actual SEQ-PROG.
		DIGITAL Assy EEPROM		EEPROM	IIC communication line of IC3156	IC3156, IC3151	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
		SENSOR Assy EEPROM	MD-IIC	BACKUP	IIC communication line of IC3652	IC3652, IC3151	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
		DAC1		DAC1	IIC communication line of IC3157	IC3157, IC3151	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
Blue 3	Abnormality in RST2 power decrease				IIC communication line of IC3158	IC3158, IC3151	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
			RST2		Is the output voltage of the DC-DC converter low?	IC3602(BD9302FP)	If RST2 does not become high after the unit is turned on, a shutdown will be generated in several seconds.
Blue 4	Abnormality in panel temperature				The 12 V power is not output.	POWER SUPPLY Unit FU3801	Check if V + 12 V is started. Also check if the FU3801 on the DIGITAL Assy has been mated.
			TMP-NG	TMP-H	High temperature abnormality in the panel temperature sensor	SENSOR Assy (IC3651)	A shutdown occurs if the reading of TEMP1 detected by the module microcomputer is 75°C or higher, a shutdown will be generated.
Blue 5	Short-circuiting of the speakers / D-AMP temperature abnormality				Low temperature abnormality in the panel temperature sensor	SENSOR Assy (IC3651)	If TEMP1 that is read by the module microcomputer is 75°C or higher, a shutdown will be generated.
			AUDIO		Speaker terminals	CN9251	Check if any speaker cable is in contact with the chassis.
Blue 6	Failure in communication with the module microcomputer				AUDIO AMP	IC9201, IC9101	Check if the AMP output is short-circuited.
			MODULE		Periphery of the cable between IO3 and M8, and IO6 and P5	CN8903, CN4001, CN8906, P5	Check if cables are firmly connected.
Blue 7	Failure in main microcomputer 3-wire serial communication				Communication line between MAIN and MOD	IC3151, IC8401	Check the communication lines (TXD_MOD/RXD_MOD/REQ_MOD).
		IF microcomputer			Periphery of the cable between D11 and M1	CN3001, CN4101	Check if cables are firmly connected.
Blue 8	Failure in IIC communication with the main microcomputer				Communication line between IF and MAIN	IC8301, IC8401	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF).
		IF microcomputer	MA-3L	IF	Communication line between MULTI and MAIN	IC8001, IC8401	Check the communication lines (TXD_IC3/RXD_IC3).
Blue 9	Failure in communication with the main microcomputer				Communication line between MULTI and MAIN	IC8001, IC8401	Check the communication lines (TXD_IC3/RXD_IC3).
		Tuner 1		FEI	IIC communication line between Tuner and MAIN	U6001, IC8401, IC6101	Check the communication lines (SCL_TU/SDA_TU or SCL_AV/SDA_AV).
		MSP/MAV		MSP/MAV	IIC communication line between MSP/MAV and MAIN	IC9101, IC8401	Check the communication lines (SCL_AV/SDA_AV).
		AV switch		AV-SW	IIC communication line between AV-SW and MAIN	IC4601, IC8401	Check the communication lines (SCL_AV/SDA_AV).
		RGB switch	MA-IIC	RGB-SW	IIC communication line between RGB-SW and MAIN	IC4701, IC8401	Check the communication lines (SCL_AV/SDA_AV).
		VDEC		VDEC	IIC communication line between M-VDEC and MAIN	IC4801, IC8401	Check the communication lines (SCL_MB/SDA_MB).
		VDEC SDRAM		SDRAM	IIC communication line between VDEC and SDRAM	IC4801, IC8401	Check the communication lines (SDRAM). Defective SDRAM
		AD/PLL		ADC	IIC communication line between ADC and MAIN	IC5001, IC8401	Check the communication lines (SCL_AV/SDA_AV).
		HDMI		HDMI	IIC communication line between HDMI_RX and MAIN	IC5201, IC8401	Check the communication lines (SCL_MB/SDA_MB).
		COFDEM		DEMOM	IIC communication line between COFDM and MAIN	IC6101, IC8401	Check the communication lines (SCL_AV/SDA_AV).
			MAIN		Communication line between IF and MAIN	IC8301, IC8401	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF).
					Communication line between IF and MAIN	IC8301, IC8401	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF).
Blue 10	FAN NG				Dirt attached to the fan motor	–	Check the fan (AXM1057).
		FAN1	FAN	FAN1	Periphery of the FAN CONNECT	AWW1290, AWW1329	FAN NG
Blue 11	High temperature of the unit				Periphery of the cable between FA1 and M5, FAN and M4, and FA2 and FA5	CN651 to CN655, CN103, CN4108	Check if cables are firmly connected.
					Periphery of the fan control regulator	IC4310, IC4303	TEMP2 A shutdown occurs because of high temperature.
Blue 12	Digital Tuner				Temperature sensor or its periphery	–	TEMP2
		DTV startup error	TEMP2		Periphery of the temperature sensor	TH9091	Check if cables are firmly connected.
Blue 13	Failure in the power supply				Periphery of the cable between IO4 and M6	CN8804, CN4004	Check if DTV antenna is short-circuited.
		DTV ANTENNA	DTUNER	PS/RST D-ANT	–	IC8401	–
Blue 14	Failure in the power supply				DC-DC converter or its periphery, RST2	IC4403, Q4404	Check if V + 3.3 V_D4 is started.
		DC-DC Converter power decrease		M-DCDC	EMG_USB	IC4309	Check if the voltage at a waveform check point is 5 V.
Blue 15	Main EEPROM				The 12 V power is not output, RST4	POWER SUPPLY Unit	Check if V + 12 V is started.
		POWER SUPPLY		RELAY	The 6.5 V power is not output	POWER SUPPLY Unit	Check if V + 6.5 V is started.
Blue 16	Main EEPROM				The 5.1 V power is not output	POWER SUPPLY Unit	Check if V + 5.1 V is started.
					EMG_DDC	DCDC converter	Check if the DCDC converter is overloaded.
Blue 17	Main EEPROM				Periphery of the cable between P8 and M3	CN4105	Check if cables are firmly connected.
		Main EEPROM communication error	MA-EEP		IIC communication line between EEPROM and MAIN	IC8404, IC8401	Check the communication lines (SCL_EP/SDA_EP).

5.5 NON-FAILURE INFORMATION

5.5.1 INFORMATION ON SYMPTOMS THAT DO NOT CONSTITUTE FAILURE

Information on symptoms that do not constitute failure

Symptom	Cause, item to check, information
HDMI: Symptoms concerning the input format and settings	
The picture color for an INPUT 1 or 3 or 4 signal is not correct.	The color setting for INPUT 1 or 3 or 4 is not compatible with that of the output equipment. Check whether the color setting is YPbPr or RGB.
The video signal to INPUT 1 or 3 or 4 is not displayed, and a message is displayed.	A unsupported video signal is input.
The audio signal input to the INPUT 1 or 3 is not output. No HDMI signal is input.	The audio setting for INPUT 1 or 3 is "AUTO," and a video signal is not input. If the audio setting is "AUTO," to output an analog audio signal, the HDMI signal must be input. (If a DVI device is to be connected, use a DVI-HDMI conversion cable.) If the HDMI video signal is not input, the analog audio signal is not output. When the DVI equipment is connected, the analog signals are selected with the setting "AUTO."
No sound of signals to INPUT 1 or 3 or 4 is output.	The setting on the side of the HDMI output equipment is wrong. Example: Dolby Digital
The 1080p input signal is not displayed properly or at all, although the 1080i input signal is displayed properly.	Check that the connected cable supports HDMI Category 2. (As the clock frequency for the 1080p signal is triple that for the 1080i signal, signal degradation caused by a cable must not be neglected. A cable supporting HDMI Category 2 can be used for the 1080p signal. Although some conventional cables can support the 1080p signal, some others cannot.)
SCART video output	
The video output signal from the SCART connector is deteriorated. Or when the video output signal from the SCART connector is recorded, its playback picture is deteriorated.	The video signal output from the SCART connector is Macrovision protected.
The video signal is not output when the component signal is input to INPUT 2.	The video signal is not output from the SCART connector when the component signal is selected.
The video signal is not output when the video signal is input to INPUT 1 or 3 or 4.	The video signal is not output from the SCART connector when the HDMI signal is selected.
AUDIO OUT and SCART	
The image displayed on the PDP is not synchronized with the sound from the SCART.	The audio signal from the SCART connector is synchronized with the video output signal from the SCART connector. And the audio signal from the AUDIO OUT is synchronized with the video signal that is currently displayed.
DIGITAL OUT	
Playback of the signal from the DIGITAL audio output connector is possible, but recording is not possible.	The video signal output from the DIGITAL connector is copy-protected.
The digital audio output signal from the DIGITAL connector is not synchronized with that from the SCART video output.	The digital audio output signal from the DIGITAL connector is synchronized with the video signal that is currently displayed, and not with the SCART video output.
Miscellaneous	
The no-signal off function is not activated.	The no-signal off and no-operation off functions are effective only if video (composite, S video, component, HDMI [excluding PC]) input or TV input is selected.
The no-operation off function is not activated.	
Power management does not function.	Power Management is effective only while an analog PC signal is being input. It is not effective with HDMI-PC signal input.
The AUTO SETUP function is not activated.	The Auto Setup function is effective only while an analog PC signal is being input. This function does not work if an analog PC signal is not input, even if the INPUT PC is selected.
The audio signal from the PC is not output.	Wrong connection of the cable to the SR connector is suspected.
Control via the SR connector is not possible.	Wrong connection of the cable to the PC INPUT (AUDIO) connector is suspected.
The picture-quality setting (AV Selection) is not stored.	The picture-quality setting is stored for each input. As the setting is changed when another input is selected, the user may have a false idea that the setting is not stored.
The picture size changes arbitrary.	The Auto Size setting is set to ON.
The display position of the screen changes slightly while the screen is on.	The orbiter function for minimizing the effects of phosphor burn is activated. Although the setting for this function can be changed on the Home menu, retaining the factory setting is strongly recommended.
The video signal to the S video connector is not displayed.	As the signal input to the connector that has been selected on the INPUT SELECT submenu of the Home menu is selected (this does not apply to the connectors located on the side of the unit), check the menu setting. If the output signal is not available even if the input signal is properly selected, input a signal to other input functions, check the connecting cables, or check the settings for the connected equipment.
The video signal to the composite video connector is not displayed.	

SUPPLEMENT: On the video setting for HDMI

There are three types of HDMI output formats: color difference 4:4:4, color difference 4:2:2, and RGB4:4:4.

(The proportions, such as 4:4:4 and 4:2:2, represent those of the amount of data for video signal components. For example, as for color difference 4:4:4, the proportion of the amount of data as for Y, Cb, and Cr is 4:4:4.)

It is required to make the settings of the PDP according to the settings of the output equipment. For usual operation, however, set them to AUTO. If the color is inappropriate, make the settings manually.

In the HDMI system, video signals are coded at 24 bits per pixel and transmitted as a series of 24-bit pixels. In a case of color difference 4:4:4, Y, Cb, and Cr use 8 bits each. In a case of color difference 4:2:2, Y, Cb, and Cr use 12 bits each, but Cb and Cr are transmitted at a half sampling rate of Y. This unit is capable of processing the upper 10 bits out of 12 bits of video data. Recent high-end DVD players, such as Pioneer DV-79AVi, are capable of outputting 10-bit color-difference signals. In general, it is said that picture quality for color difference 4:2:2 format is assumed to be higher, because human eyes are more sensitive to luminance than to colors. In the case of RGB4:4:4, R, G, and B use 8 bits each.

5.5.1.1 CONFIRMATION ON THE HDMI CONTROL FUNCTION

When you use the HDMI Control (HDMI-CEC) function, if the unit does not function properly, such as not being able to control or recognize connected equipment, check the following:

- **Confirmation of the manufacturer of the connected equipment**

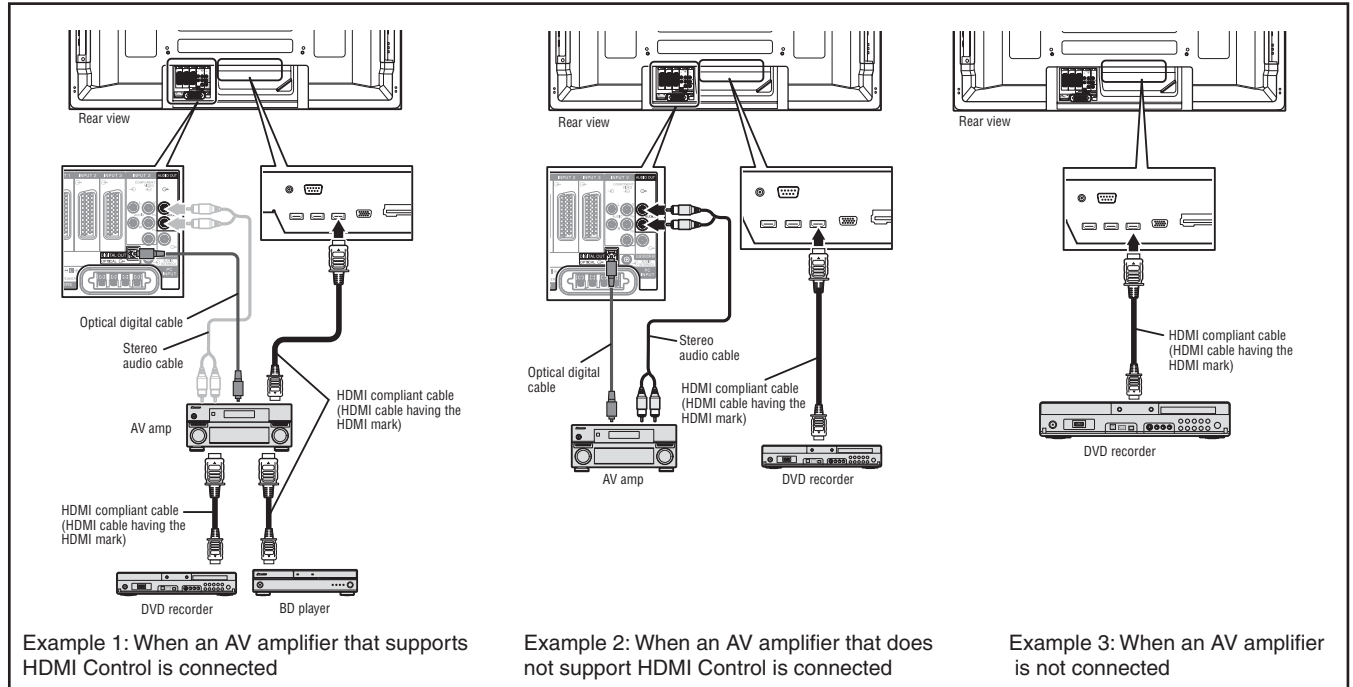
Check if the connected equipment was manufactured by Pioneer and if it supports the HDMI Control function. If its manufacturer is not Pioneer, proper operations are not guaranteed.

- **Confirmation of connections**

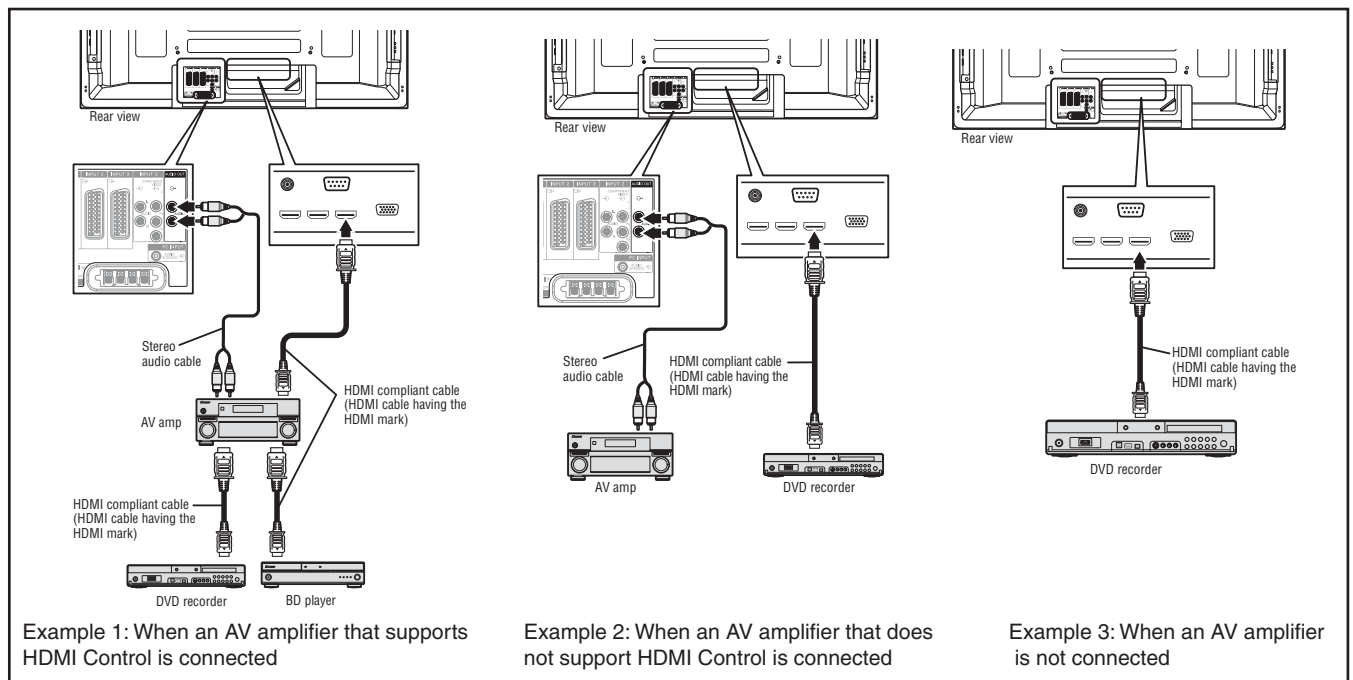
Check if the unit is connected properly, as shown in the figures below:

(For details, refer to "Making the HDMI Control connections" in the Operating instructions.)

- **PDP-4280XD and PDP-428XD**



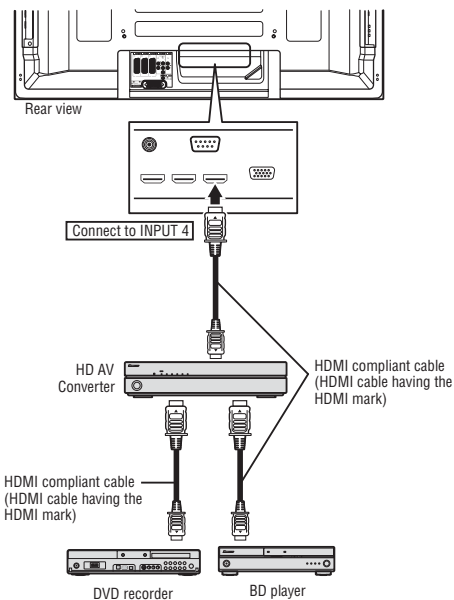
- **PDP-4280XA**



Check that the following conditions are met:

- A
- The connected equipment must support the HDMI Control function.
 - The equipment must be connected to the INPUT connector that has been selected in "Input Setting" on the HDMI Control Setting menu.
 - The connections must be made properly, as shown in the above figures (in a case where an AV device, such as an AV amplifier, and a DVD recorder/BD player are connected, in a case where only a DVD recorder/BD player is connected, and in a case where an AV device, such as an AV amplifier, which does not support HDMI-CEC, is connected).
- B
- When an AV device that supports the HDMI Control function is connected, it must be connected between the PDP and a DVD recorder/BD player.
 - An AV device, such as an AV amplifier, and the HD AV Converter must not be connected simultaneously.
 - The HDMI Control function must be activated on the connected equipment (DVD recorder, BD player, AV device [AV amplifier, etc.], or the HD AV Converter). (Refer to the instruction manual of the connected equipment.)

- C
- If the HD AV Converter is connected, check if it is connected properly, as shown in the figure below.
(For details, refer to "Selecting the HD AV Converter" and "HD AV Converter mode" in the Operating instructions.)



Check that the following conditions are met:

- D
- The HD AV Converter must be connected to the INPUT 4 connector of the PDP.
 - The HD AV Converter must be connected between the PDP and a DVD recorder/BD player, as shown in the figure above.
 - The AV device, such as an AV amplifier, and the HD AV Converter are not connected simultaneously.
 - The HDMI Control function must be activated on the HD AV Converter. (For details, refer to the instruction manual of the HD AV Converter.)
- E

• Confirmation of the number of connected devices

Check that the number of connected devices does not exceed the maximum number for guaranteed operations.

Equipment	Maximum Number
DVD recorder	2
BD player	2
AV System	1 (*1)
HD AV Converter	1 (*1)

(*1) Operation with either an AV device (AV amplifier, etc.) or the HD AV Converter is guaranteed. If both are connected, their operations are not guaranteed.

• Confirmation of settings

Check that the settings for the HDMI Control function are properly made. (For details, refer to "Setting the HDMI Control" in the Operating instructions.)

Check that the following conditions are met:

- "Input Setting" on the HDMI Control Setting menu must be set to the same input as that to which the equipment that supports the HDMI Control function is connected.
- When the HD AV Converter is connected, "HD AV Converter" on the HDMI Control Setting menu must be set to Enable.
- When Power Off Control, Power-On Ready, or Hold Sound Status are to be used, their settings must be On.
- When the HD AV Converter is connected, the HDMI Control switch on the rear panel of the HD AV Converter must be set to ON. The HDMI Control indicator on the front panel of the HD AV Converter will light in green when HDMI Control is enabled. (The HDMI Control indicator's lighting in green means HDMI Control is possible.)

• Confirmation of operations

Check that the HDMI Control function works properly.

- (1) Connect a device that supports the HDMI Control function.
- (2) Perform the procedures that are required after changing connections, which are described in "Making the HDMI Control connections" in the Operating instructions.
 - 1 Turn on the plasma television and all the connected devices.
 - 2 Confirm that the setting in "Input Setting" for "HDMI Control Setting" is properly entered according to the connected devices. Also confirm the HDMI Control related settings in the connected devices.
 - 3 Switch to the HDMI input terminals to which the devices are connected to check if audio and video images are properly output and displayed.
 - 4 Try turning off the plasma television, then turn the power back on to the plasma television.
- (3) Perform "Power On Test" or "Power Off Test" on the HDMI Control Setting menu. (For details, refer to "Power On/Off Test" in the Operating instructions.)

If the following occurs even if the operation check is performed properly, a failure, such as breakage of the HDMI cable, problems on the side of the connected device, and problems with the MAIN Assy, may be suspected:

- "Power On Test" or "Power Off Test" cannot be selected (the items are grayed)
- The connected device cannot be turned on/off.

In some cases, an operation check using another HDMI input connector may be required in order to narrow down the cause.

As for the HD AV Converter, because "Power On Test" / "Power Off Test" is not available, follow the procedures below:

- (1) Connect the HD AV Converter to the INPUT 4 connector. Set "HD AV Converter" on the HDMI Control Setting menu to Enable. The HD AV Converter can support HDMI Control only when it is connected to the INPUT 4 connector of the PDP.
- (2) Perform the procedures that are required after changing connections, which are described in "Making the HDMI Control connections" in the Operating instructions.
- (3) Turn the PDP off. If the PDP turns off properly, turn the HD AV Converter off.

If the following occurs even if the operation check is performed properly, a failure, such as breakage of the HDMI cable, problems on the side of the HD AV Converter, and problems with the MAIN Assy, may be suspected:

- The HD AV Converter cannot be turned off.

5.5.2 FUNCTION OF DECREASING THE BRIGHTNESS LEVEL

■ High-temperature protection function 1

If the panel temperature (TEMP1) reaches 70 °C, the limit for the maximum count of plasma discharge will be gradually decreased to lower the temperature of the panel.

- This function is activated based on the TEMP1 temperature.
- The limit for the maximum count of plasma discharge will be decreased 8 per 5 seconds.
- The lowest limit for the maximum count of plasma discharge is about 700.
- The maximum count of plasma discharge will begin to increase gradually if the panel temperature falls to the specified temperature.

■ High-temperature protection function 2

If the panel temperature (TEMP1) reaches 65 °C, the plasma-discharge count that is determined based on the input APL will be decreased. In actual operation, the ABL adjustment value will be offset.

- This function is activated based on the TEMP1 temperature.
- The ABL adjustment value will be decreased by one step per 30 seconds.
- The ABL adjustment value will begin to increase gradually if the panel temperature falls to the specified temperature.

■ Panel protection function 1 (protection against still picture)

If a still picture is displayed for 3 minutes or more, the limit for the maximum count of plasma discharge will be gradually decreased to minimize the effects of phosphor burn.

- This function is activated after detection if the displayed picture is still (the picture will be considered to be still if only the mouse cursor is moved).
- The limit for the maximum count of plasma discharge will be decreased 8 per 5 seconds.
- The lowest limit for the maximum count of plasma discharge is about 700 (it takes about 15 minutes to reach the lowest limit, although the required time varies depending on the displayed picture).
- The maximum count of plasma discharge will begin to increase gradually if the displayed picture is changed to animated picture.

Note: How to decrease the brightness level in this function is the same as in high-temperature protection function 1.

■ Panel protection function 2 (SCAN IC protection)

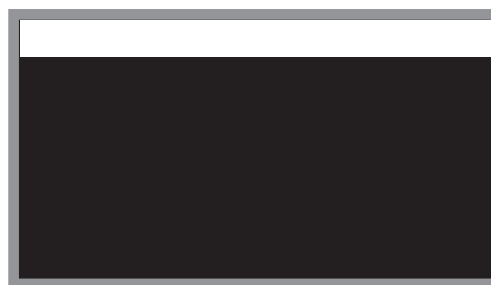
If a particular load is applied to the SCAN IC, the limit for the maximum count of plasma discharge will be gradually decreased.

Note: How to decrease the brightness level in this function is the same as in high-temperature protection function 1.

■ Panel protection function 3 (protection against panel cracking)

A bright window, as shown in the figure on the right, on the screen increases the heat of the panel. If such a pattern is recognized on the screen, the limit for the maximum count of plasma discharge will be gradually decreased.

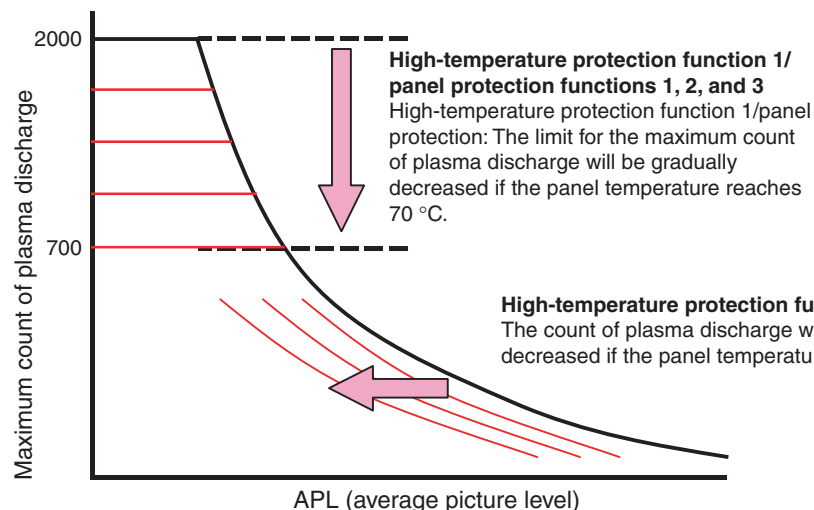
Note: How to decrease the brightness level in this function is the same as in high-temperature protection function 1.



Detection example: SCAN IC protection



Detection example: Protection against panel cracking



5.6 OUTLINE OF THE OPERATION

5.6.1 PANEL DRIVE-POWER ON/OFF FUNCTION

Function:

It is an operational mode where the digital signal processing performs circuit operation but the power is not supplied to the panel driving system (Vsus, VAddress) in order to avoid a power down (PD).

Application:

1. When it is necessary to check whether the signal output is correctly reaching the drive system in a repairing activity etc.
2. In the case of a PD, to determine whether the problem is with the panel drive-power supply or with the other system power supply.

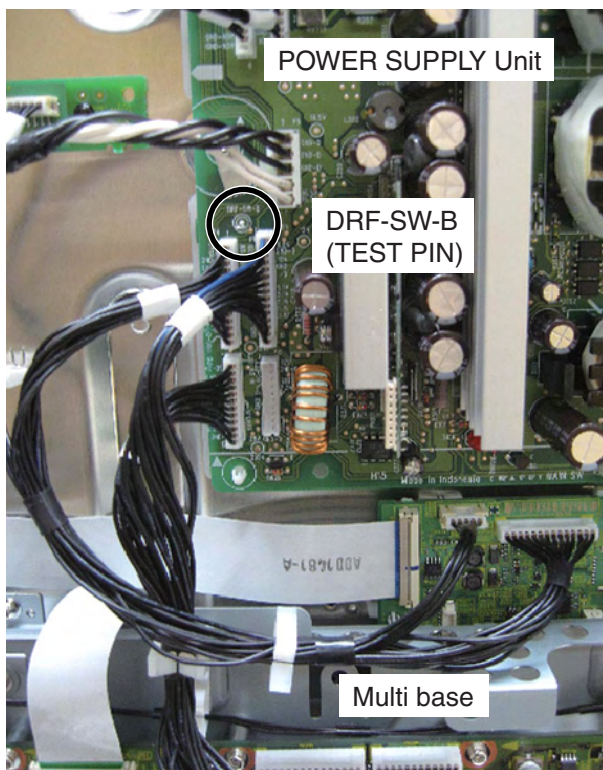
Method:

1. Short-circuit between the specified location of the POWER SUPPLY Unit and GND (Multi base section recommended), using a jumper with alligator clips (refer to the photos below).
2. Execute [DRV S00] by RS-232C command. ([DRV S01] for release)

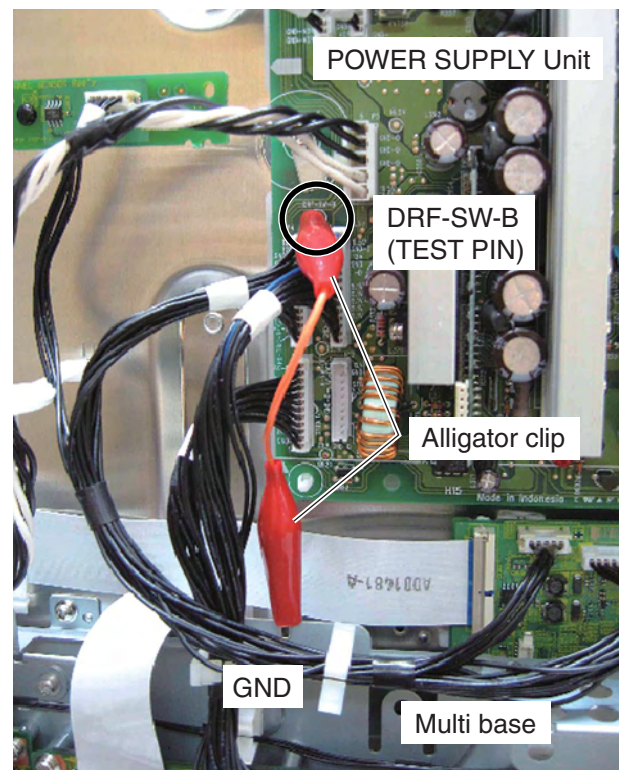
Supplemental explanation:

- When the panel drive-power is in OFF state, there will be no PD, except PS_PD, as the PD signal has been muted.
- If the clip is removed in the OFF state of the panel drive-power, PD will take place at the instance of clip removal. Therefore, be sure to remove the clip after turning the power OFF.
- Under RS-232C command control, [DRV S01] (release) is possible during power ON. However, there is a possibility of damaging the set. Therefore, make this operation only after turning the power OFF.
- The [DRV S00/S01] commands are effective during Standby mode. However, if no operation is performed within about 10 seconds or more, the panel drive-power OFF state will be canceled.
- When the main power switch is set to OFF, no command is accepted.
- The panel drive-power OFF state established by the [DRVS00] command will be canceled by unplugging the AC power cord, setting the main power switch to OFF, or by performing no operation for 10 seconds or more during Standby mode.

When the panel drive-power is ON



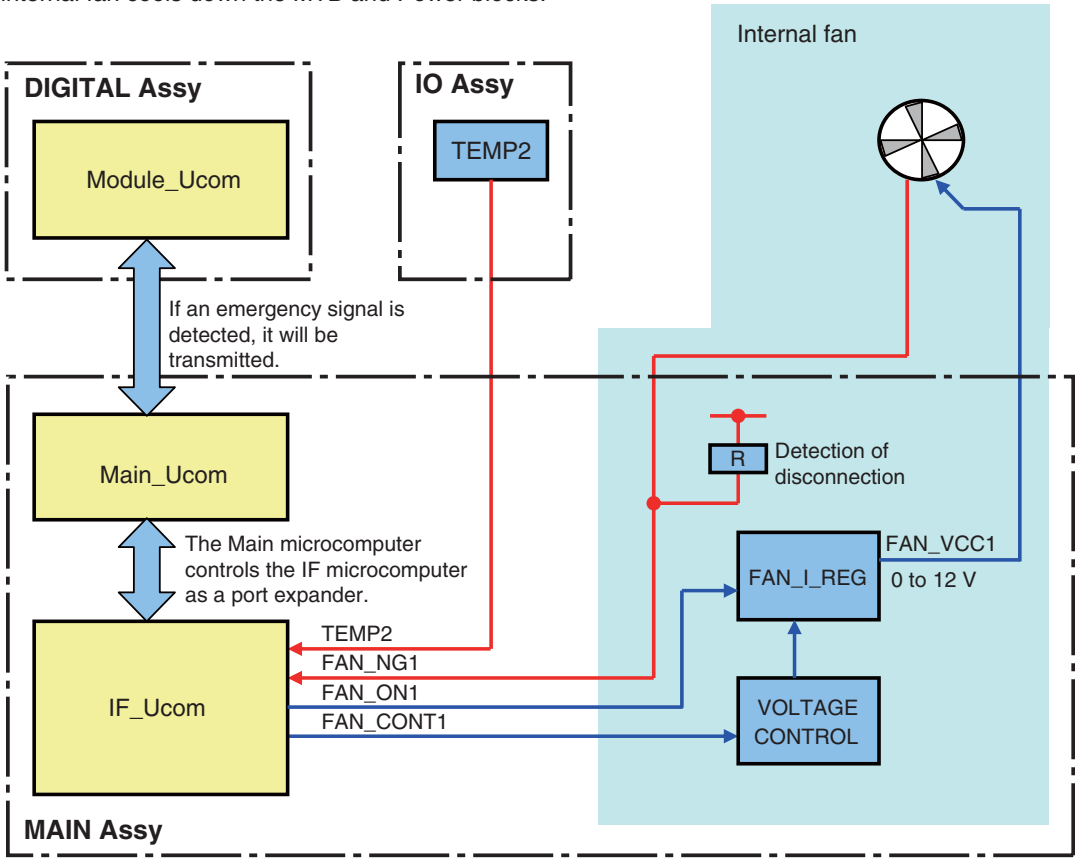
When the panel drive-power is OFF



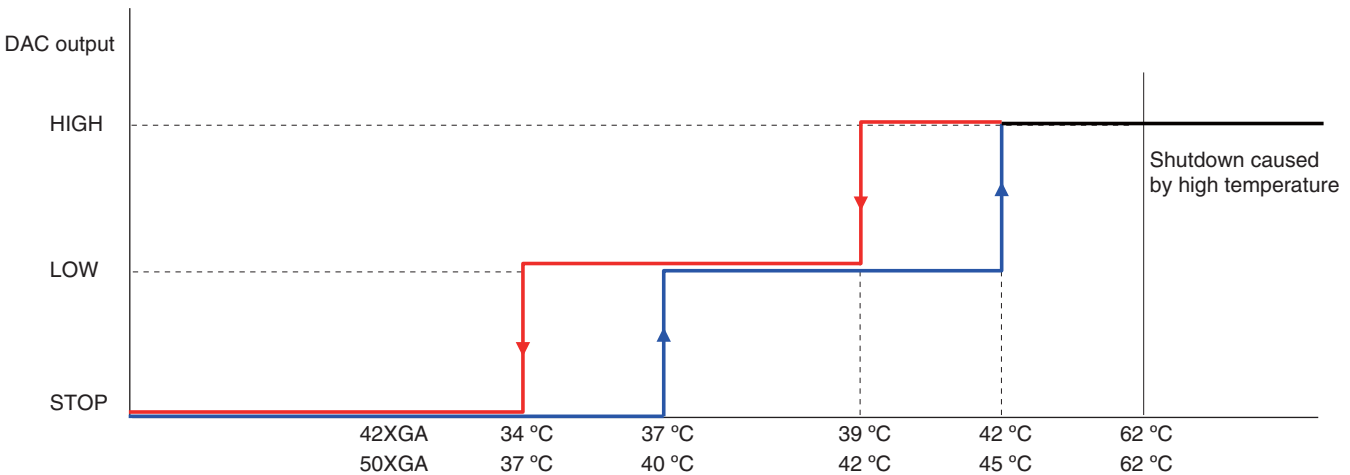
5.6.2 SPECIFICATION OF THE FAN CONTROL

Block diagram

The internal fan cools down the MTB and Power blocks.



Operation specifications

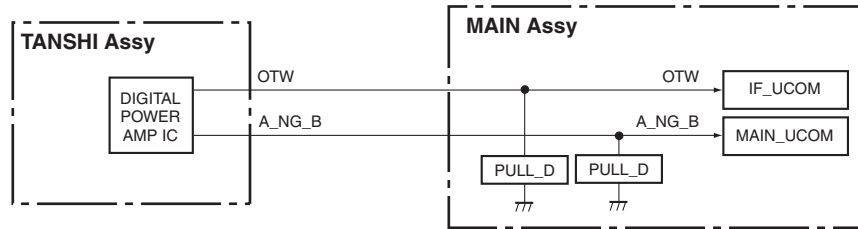


Notes:

- The operating temperature of the fan is higher than the ambient temperature, because the sensor temperature is read by the microcomputer.
- If the critical values for signals are displayed in the address circuit, the fan may be activated or be rotated at higher speed in response to values lower than the set temperature values shown above.

Protection of the Power Amplifier

● Circuit configuration



● Specifications for port monitoring

Port Name	SD/PD Indication	Active	Monitoring conditions	Operation
A_NG_B	AUDIO	Shutdown occurs when the signal is "L." 30 mS * 3 times	RST4 = "H" (always) (Monitoring starts 2 sec after the above conditions are established.)	The main CPU operations described below will be performed when either "A_NG_B = L" or "OTW = L" is detected (established) under the monitoring conditions.
OTW	AUDIO	Shutdown occurs when the signal is "L." 130 mS * 3 times		

● Operation specifications of the main CPU

- (1) When a shutdown decision is made by the main CPU
 - After a warning indication is displayed for 5 sec, a shutdown is generated (the blue LED flashes 5 times).
 - A warning indication is displayed for all input-signal types.
 - Example of a warning indication: "The speaker terminals are short-circuited. After reconnection, turn the unit on again."
(For 50-inch models) (For 42-inch models, an indication declaring a forced power-off is displayed.)

(2) Display conditions

When the panel is on: A warning indication is displayed immediately.

When the panel is off: A warning indication is not displayed immediately but is displayed when the panel is turned on.

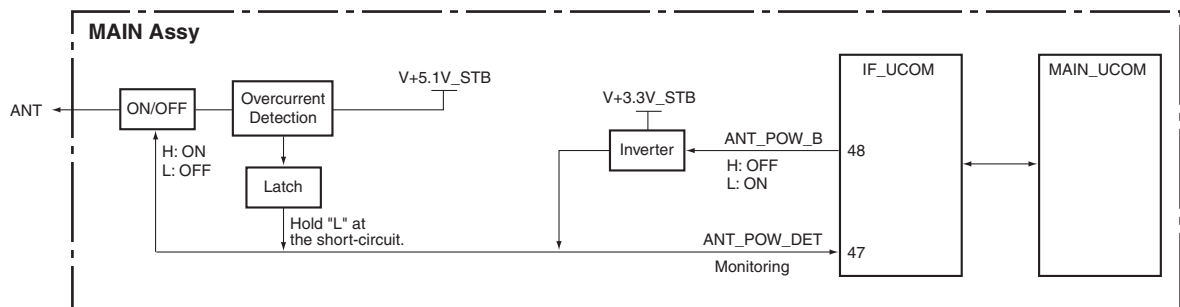
Note: A warning indication is displayed each time the panel is turned on if the conditions for a shutdown persist.

● Conditions for resetting the circuits

The circuits will be reset upon Standby ON/OFF.

DTB Antenna power supply

● Circuit configuration

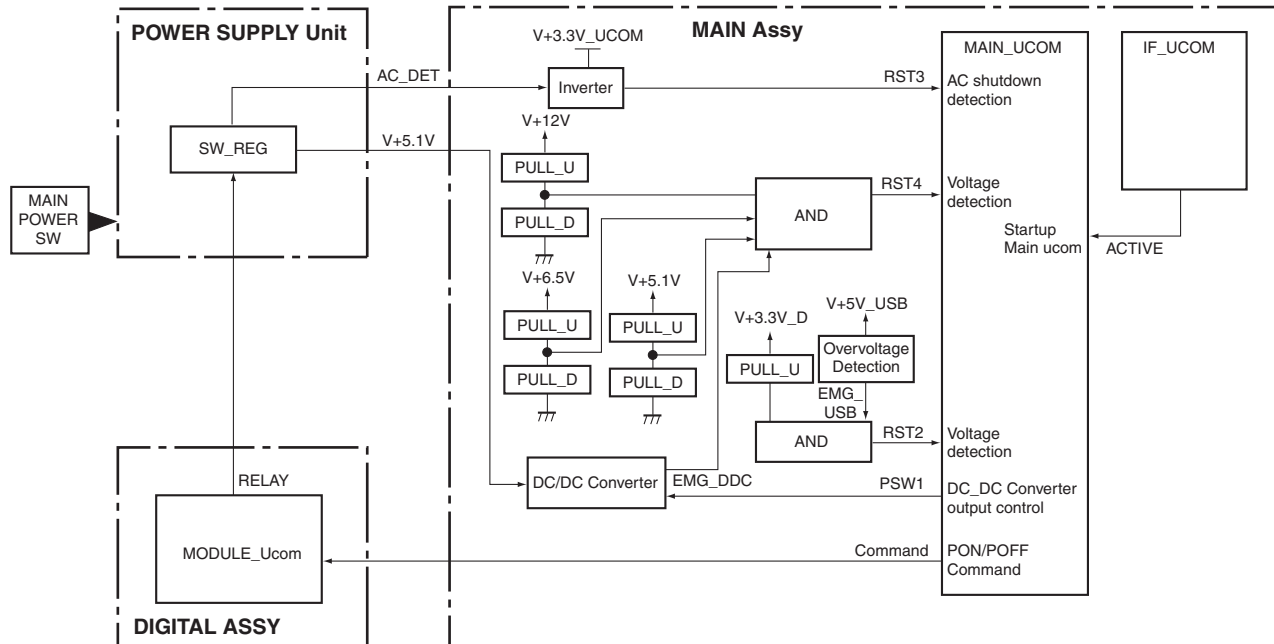


● Specifications for port monitoring

Port Name	SD/PD Indication	Active	Monitoring conditions	Operation
ANT_POW_DET	DTB antenna short-circuited	Flashing of the LED starts when the signal is L (100 mS, 3 times)	RST4 = H and ANT_POW_B = L	If "ANT_POW_DET = L" is detected (established) under the monitoring conditions, an SD log is created, and the LED flashes for 60 sec. A shutdown process is not performed in the power system.

Power supply and DC-DC converter

● Circuit configuration



● Specifications for port monitoring

Port Name	SD/PD Indication	Active	Monitoring conditions	Operation
RST2	ASIC power (M-DCDC)	Shutdown occurs when the signal is "L." for 5 sec after PSW1 is ON. or for 2 sec while the unit is ON.	- Panel ON (RST4 = H and PSW1 = L) - While awaiting restoration of RST2 (RST2 = L)	The SD timer starts when "RST2 = L" is detected under monitoring conditions. If "RST3 = H," "M_SW_DET_B = H," or "RST4 = L" is detected, or if a power-down or shutdown in the module microcomputer system is not generated, the unit waits for 30 mS. Then, if the SD timer continues to count for 2 sec or more, a shutdown is determined, and a shutdown process starts. A specific LED flash pattern (blue LED, 13 times) starts. The next PON operation is valid, and the flag is cleared upon the next power-on. If RST2 is H, a restoration process starts according to the latest power-on/-off status.
RST3	AC power	AC_OFF when the signal is "H."	- Active STB (including SD/PD statuses) - Functional STB - Panel ON (Areas other than North America) While the main power switch is set to OFF (M_SW_DET_B = H) (North America) While the main power switch is set to OFF (M_SW_DET_B = H) - While awaiting restoration of AC power (RST3 = H) - While awaiting restoration of RST2 (RST2 = L) - While awaiting restoration of RST4 (RST4 = L)	If "RST3 = H" (AC_OFF) is detected under the monitoring conditions, a power-off process starts. Monitoring of the RST3 port is continued, while monitoring of other ports is interrupted. Communication is controlled only by the IF microcomputer. The port outputs are set as specified. If the signal at the RST3 port continues to be H after 30 mS of waiting, monitoring is continued. If RST3 is L, a restoration process starts according to the latest power-on/-off status.
RST4	MAIN power (RELAY)	Shutdown occurs if the signal is "L." for 5 sec after RELAY is ON. or for 2 sec while the unit is ON or in Functional STB.	- Functional STB - Panel ON (Areas other than North America) While the main power switch is set to OFF (M_SW_DET_B = H) - While awaiting restoration of RST2 (RST2 = L) - While awaiting restoration of RST4 (RST4 = L)	The SD timer starts when "RST4 = L" (power-off of devices in the functional STB system) is detected under monitoring conditions. The RST4 initialization process starts, and input monitoring, communication setting, and output-terminal setting are performed. The RST4-SD timer starts. If either "RST3 = H" or "M_SW_DET_B = H" is detected, or if a power-down or shutdown in the module microcomputer system is not generated, the unit waits for 30 mS. Then, if the SD timer continues to count for 2 sec or more, a shutdown is determined, and a shutdown process starts. A specific LED flash pattern (blue LED, 13 times) starts. The next PON operation is valid, and the flag is cleared upon the next power-on. If RST4 is H, a restoration process starts according to the latest power-on/-off status.

A

E



C

E

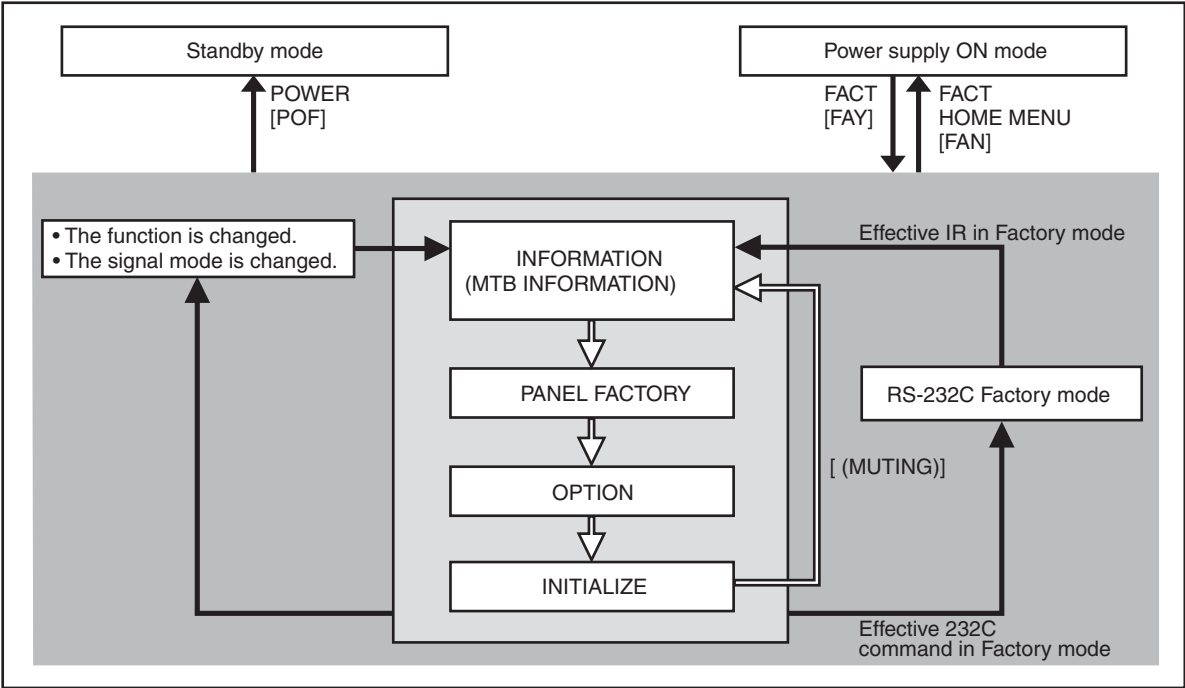
1234

6. SERVICE FACTORY MODE

6.1 OUTLINE OF THE SERVICE FACTORY MODE

A Operations during Service Factory mode are described here.

6.1.1 SERVICE FACTORY MODE TRANSITION CHART



D

6.1.2 HOW TO ENTER/EXIT SERVICE FACTORY MODE

E

■ How to enter Service Factory Mode

By using a PDP service remote control)

- PDP service remote control : Press [FACTORY] key.

By issuing RS-232C commands)

- During normal Standby mode : Issue [PON] then [FAY].
- During normal operation mode : Issue [FAY].

■ How to exit Service Factory Mode

By using a PDP service remote control)

- PDP service remote control : press [FACTORY] key.
- Supplied remote control unit : press [HOME MENU] key.

By issuing RS-232C commands)

- Issue [FAN].

■ How to enter Service Factory Mode by Using the supplied Remote Control Unit

- Same as previous model. Please refer to the technical document (Service Know-how).

6.1.3 FUNCTIONS WHEN ENTERING THE SERVICE FACTORY MODE

■ Functions whose setting are set to OFF

The settings for the following functions are set to OFF when Service Factory mode is entered (including when the “FAY” command is received) :

Function	Remarks
2-Screen Operation	Input function set on the main side is selected.
FREEZE	
Auto size, Side Mask	It is not performed during Factory mode.
ORBITER, Mask control	Central value operation (ORBITER)
Sleep Timer	Cancel the operation.
Room light sensor	Turn off the detecting operation excepting Regular A, D model (Setting data will be retained.)
Blue LED dimmer	Turn off the operation (Setting data will be retained.)
Power control	Turn off the operation (Setting data will be retained.)
Image position	Central value operation

■ User data

User data will be treated as follows :

- User data on picture-quality and audio-quality adjustments are not reflected, and factory-preset data are output (user data will be retained in memory). When the unit enters Service Factory mode, the current audio-quality adjustment data will be still be retained in memory.
- User-setting data will be applied to the various settings (items on the menus), signal formats, and the items that are associated with path change (HDMI settings, etc.).
- Data on screen (i.e., screen position; meaning clock dividers, and not including data on screen size). Are reset to the default values (data stored in memory will be retained).
Screen size will be retained.

6.1.4 REMOTE CONTROL CODE IN SERVICE FACTORY MODE

Remote Control Keys	Basic Functions	Remarks
MUTING	Switching the main items.	Shifting to the next main item (top).
↓ (DOWN)	Switching the subtitled items.	Shifting downward to the next subtitled item.
↑ (UP)	Switching the subtitled items.	Shifting upward to the next upper layer.
← (LEFT)	Decreasing the adjustment value.	Decreasing the adjustment value.
→ (RIGHT)	Increasing the adjustment value.	Increasing the adjustment value.
ENTER/SET	Switching the layers.	Shifting downward or upward to the next lower or upper layer.
INPUT	Selecting INPUT.	Shifting the INPUT to the next function.
INPUTxx	Selecting INPUT.	Switching the INPUT to xx. (xx=1 to 6 etc)
CH+/P+	Increasing the channel number.	
CH-/P-	Decreasing the channel number.	
Numeric Keys	Function: TV	Function: TV (previously selected channel number is selected)
POWER	Power OFF.	Turning the power off.
FACTORY	Factory OFF (Factory mode)	In Factory mode, turning Factory mode off.
	Factory ON (Non-Factory mode).	In Non-Factory mode, turn Fuctory mode on.
HOME MENU	Menu ON.	In Factory mode, turn Factory mode off.
VOLUME+	Volume UP.	Increasing 10 the adjustment value. (PANEL FACTORY)
VOLUME-	Volume DOWN.	Decreasing 10 the adjustment value. (PANEL FACTORY)
DRIVE OFF (Note1)	Drive Mode OFF.	Turning Drive mode off.
INTEGRATOR	INTEGRATOR MENU ON.	Enter INTEGRATOR MODE.

(Note 1) When ten seconds have passed since the [DRIVE OFF] key was pressed at the standby, it becomes invalid.
Please press [POWER] key from the [DRIVE OFF] key pressing within ten seconds when you do power supply ON while driven OFF.



PDP service
remote control

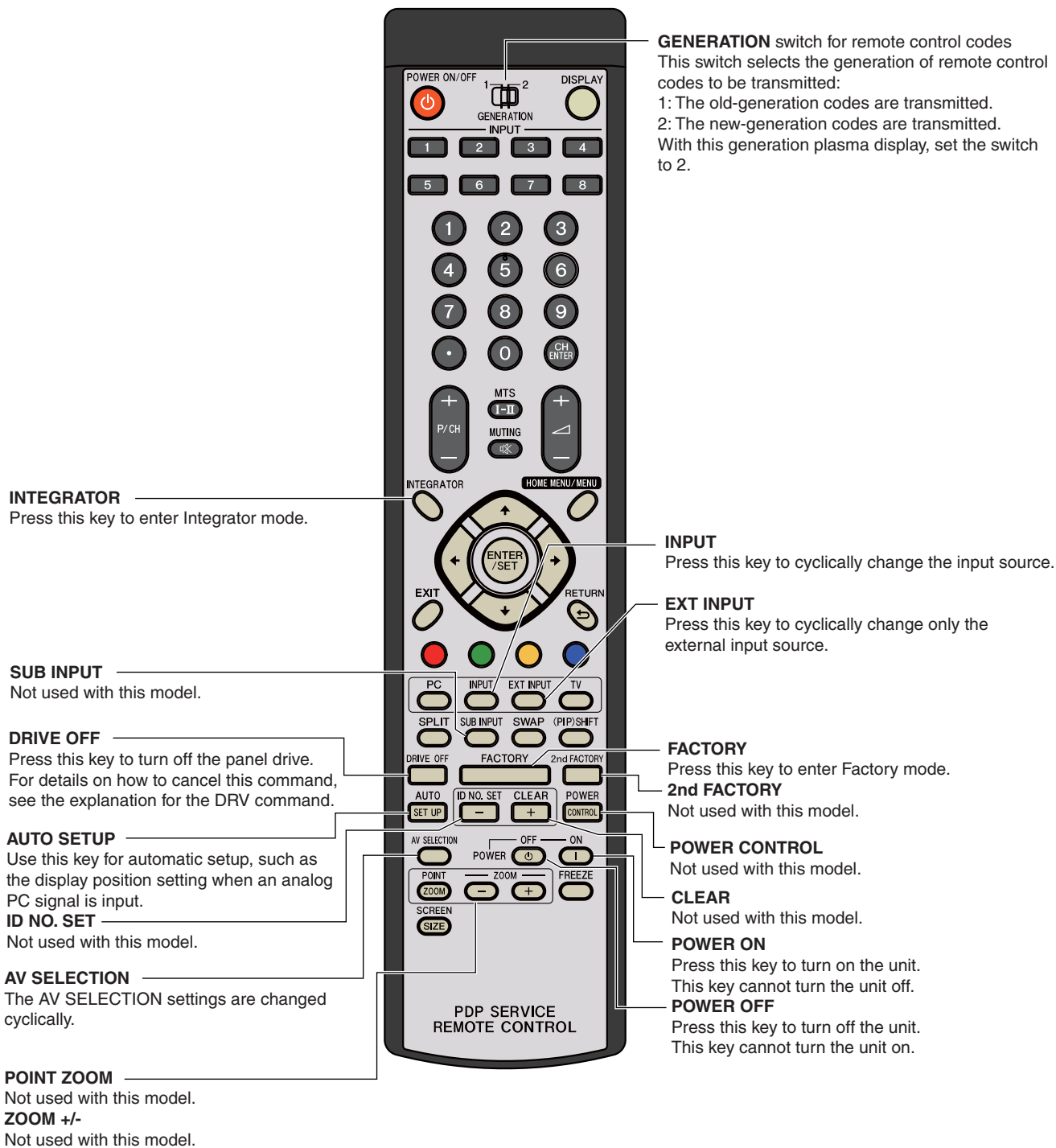
PDP-428XD
PDP-508XD

PDP-4280XD
PDP-5080XD

PDP-4280XA
PDP-5080XA

6.1.5 PDP SERVICE REMOTE CONTROL

- The keys labeled with the same names on the service remote control unit have the same functions as those of the supplied remote control unit. (See "2.3 PANEL FACILITIES.")
- For the keys not provided on the supplied remote control unit, see the explanations below:



6.1.6 FACTORY HIERARCHICAL TABLE

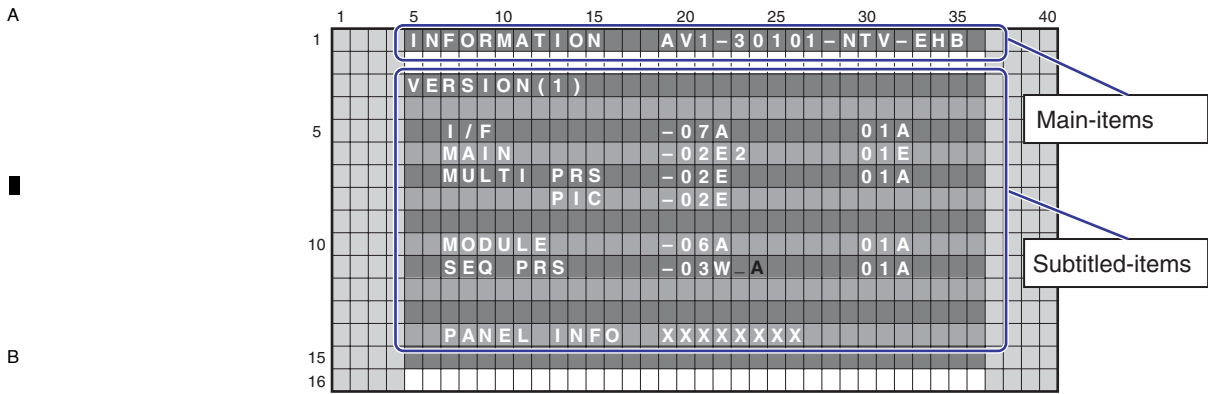
Large Item			Variable / Adjustment Range	Remarks
	Middle Item			
		Small Item		
6.2.1 INFORMATION				
	6.2.1.1	VERSION (1)		
	6.2.1.2	VERSION (2)		
	6.2.1.3	MAIN NG	CLEAR <=>	NO <=> YES
	6.2.1.4	TEMPERATURE		
	6.2.1.5	HOURLY METER		
	6.2.1.6	HDMI SIGNAL INFO 1		
	6.2.1.7	HDMI SIGNAL INFO 2		
	6.2.1.8	VDEC SIGNAL INFO 1		
	6.2.1.9	VDEC SIGNAL INFO 2		
6.2.2 PANEL FACTORY (+)				
	6.2.2.1	PANEL INFORMATION		
	6.2.2.2	PANEL WORKS		
	6.2.2.3	POWER DOWN		
	6.2.2.4	SHUT DOWN		
	6.2.2.5	PANEL-1 ADJ (+)	VOL SUS <=>	000 to 255 Equivalent to VSU (Setting value: Factory adjustment value)
		VOL OFFSET <=>	000 to 255 Equivalent to VOF (Setting value: Factory adjustment value)	
		VOL RST P <=>	000 to 255 Equivalent to VRP (Setting value: Factory adjustment value)	
		VOL XPOFS1 <=>	000 to 255 Equivalent to VX1 (Setting value: Factory adjustment value)	
		VOL XPOFS2 <=>	000 to 255 Equivalent to VX2 (Setting value: Factory adjustment value)	
		VOL YNOFS1 <=>	000 to 255 Equivalent to VY1 (Setting value: Factory adjustment value)	
		VOL YNOFS3 <=>	000 to 255 Equivalent to VY3 (Setting value: Factory adjustment value)	
		VOL YNOFS4 <=>	000 to 255 Equivalent to VY4 (Setting value: Factory adjustment value)	
		RESET1ST_KSB <=>	112 to 144 Equivalent to R1K (Setting value: 128 fixed)	
		RESET2ND_KSB <=>	112 to 144 Equivalent to R2K (Setting value: 128 fixed)	
		YSTL_1SF_KSB <=>	112 to 144 Equivalent to Y1K (Setting value: 128 fixed)	
		YSTL_1SF_HZ <=>	112 to 144 Equivalent to Y1Z (Setting value: 128 fixed)	
		XSUS_1ST_B <=>	112 to 144 Equivalent to X1B (Setting value: 128 fixed)	
		YSUS_2ND_B <=>	112 to 144 Equivalent to Y2B (Setting value: 128 fixed)	
		XSUS_3RD_B <=>	112 to 144 Equivalent to X3B (Setting value: 128 fixed)	
		YSUS_B <=>	112 to 144 Equivalent to YSB (Setting value: 128 fixed)	
		XSUS_B <=>	112 to 144 Equivalent to XSB (Setting value: 128 fixed)	
		YSTL_KSB <=>	112 to 144 Equivalent to YTK (Setting value: 128 fixed)	
		YSTL_HZ <=>	112 to 144 Equivalent to YTZ (Setting value: 128 fixed)	
		YSTL_2SF_KSB <=>	112 to 144 Equivalent to Y2K (Setting value: 128 fixed)	
		YSTL_2SF_HZ <=>	112 to 144 Equivalent to Y2Z (Setting value: 128 fixed)	
		YSTL_FMR_KSB <=>	112 to 144 Equivalent to YNK (Setting value: 128 fixed)	
		YSTL_FMR_HZ <=>	112 to 144 Equivalent to YNZ (Setting value: 128 fixed)	
		SUS FREQ. <=>	MODE 1 to MODE 8 Equivalent to SFR (Setting value: MODE1)	
	6.2.2.6	PANEL-2 ADJ (+)	R-HIGH <=>	000 to 511 Equivalent to PRH (Setting value: Factory adjustment value)
		G-HIGH <=>	000 to 511 Equivalent to PGH (Setting value: Factory adjustment value)	
		B-HIGH <=>	000 to 511 Equivalent to PBH (Setting value: Factory adjustment value)	
		R-LOW <=>	000 to 999 Equivalent to PRL (Setting value: 512 fixed)	
		G-LOW <=>	000 to 999 Equivalent to PGL (Setting value: 512 fixed)	
		B-LOW <=>	000 to 999 Equivalent to PBL (Setting value: 512 fixed)	
		ABL <=>	000 to 255 Equivalent to ABL (Setting value: Factory adjustment value)	
	6.2.2.7	PANEL FUNCTION (+)	R-LEVEL <=>	LV-0 to LV-7 Equivalent to RRL (Setting value: Lv-0)
		G-LEVEL <=>	LV-0 to LV-7 Equivalent to RGL (Setting value: Lv-0)	
		B-LEVEL <=>	LV-0 to LV-7 Equivalent to RBL (Setting value: Lv-0)	
		ADDRESS L1 <=>	PH0 to PH9 Equivalent to AP0S* (Setting value: PH1)	
		ADDRESS L2 <=>	PH0 to PH9 Equivalent to AP0S* (Setting value: PH2)	
		ADDRESS L3 <=>	PH0 to PH9 Equivalent to AP1S* (Setting value: PH0)	
		ADDRESS L4 <=>	PH0 to PH9 Equivalent to AP1S* (Setting value: PH1)	
		ADDRESS U1 <=>	PH0 to PH9 Equivalent to AP2S* (Setting value: PH0)	
		ADDRESS U2 <=>	PH0 to PH9 Equivalent to AP2S* (Setting value: PH0)	
		ADDRESS U3 <=>	PH0 to PH9 Equivalent to AP3S* (Setting value: PH0)	
		ADDRESS U4 <=>	PH0 to PH9 Equivalent to AP3S* (Setting value: PH0)	
		STK MODE <=>	OFF <=> MODE1 to MODE8 <=> Equivalent to SMK (Setting value: MODE1)	
	6.2.2.8	ETC. (+)	BACKUP DATA <=>	NO OPRT <=> TRANSFER or ERR Equivalent to BCP
		DIGITAL EEPROM <=>	NO OPRT <=> DELETE/REPAIR	Equivalent to FAJ/UAJ
		PD INFO. <=>	NO OPRT <=> CLEAR	Equivalent to CPD
		SD INFO. <=>	NO OPRT <=> CLEAR	Equivalent to CSD
		HR-MTR INFO. <=>	NO OPRT <=> CLEAR	Equivalent to CHM
		PM/B1-B5 <=>	NO OPRT <=> CLEAR	Equivalent to CPM
		P COUNT INFO. <=>	NO OPRT <=> CLEAR	Equivalent to CPC
		MAX TEMP. <=>	NO OPRT <=> CLEAR	Equivalent to CMT
	6.2.2.9	RASTER MASK SETUP (+)	MASK OFF	Equivalent to MKS+S00
		RST MASK 01 <=>	<=> 48V <=> 50V <=> 60V <=> 60P <=> 72V <=> 75V <=>	Equivalent to MKS+S51
		•••		•••
		RST MASK 25 <=>		Equivalent to MKS+S75

*: Setting value

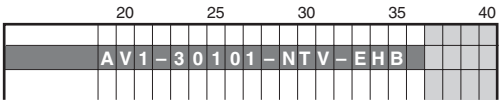
Large Item			Variable / Adjustment Range	Remarks
	Middle Item	Small Item		
6.2.2 PANEL FACTORY (+)				
	6.2.2.10 PATTERN MASK SETUP (+)	MASK OFF	<=> 48V <=> 50V <=> 60V <=> 60P <=> 72V <=> 75V <=>	Equivalent to MKS+S00
		PTN MASK 01 <=>		Equivalent to MKS+S01
		•••		•••
		PTN MASK 49 <=>		Equivalent to MKS+S49
	6.2.2.11 COMBI MASK SETUP (+)	MASK OFF	<=> 48V <=> 50V <=> 60V <=> 60P <=> 72V <=> 75V <=>	Equivalent to MKC+S00
		CMB MASK 01 <=>		Equivalent to MKC+S01
		•••		•••
		CMB MASK 17 <=>		Equivalent to MKC+S17
6.2.3 OPTION				
6.2.3.1 EDID WRITE MODE <=>		DISABLE <=> ENABLE	Exclusively used for production line for the technical analysis	
6.2.3.2 CH PRESET <=>		USER <=> FACTORY		
6.2.3.3 SYNC DET (+)				
6.2.4 INITIALIZE				
6.2.4.1 SIDE MASK LEVEL (+)	SIDE MASK LEVEL <=>			
6.2.4.2 FINAL SETUP	DATA RESET <=>	NO <=> YES		
6.2.4.3 Wide XGA AUTO <=>		DISABLE <=> ENABLE		Exclusively used for technical analysis (details omitted)

1 2 3 4

6.1.7 INDICATIONS IN SERVICE FACTORY MODE



Main-item indications



1 Input function

Input Functions	OSD
AV 1 to 5	AV 1 to 5
Terrestrial Analog Wave	AIR
Terrestrial Digital Wave (excepting Regular A model)	ARD
Cable	CBL
Home Gallery (Step-up D model only)	HG
PC	PC

2 SIG mode and Screen size

Note: See SIG-Mode Tables. (See next page.)

3 Color system and Signal type

Color System and Signal Type	OSD	
	At Composite Input	At S-connector Input
NTSC	NTV	NTS
PAL	PLV	PLS
PAL M	PMV	PMS
PAL N	PNV	PNS
PAL 60	P6V	P6S
SECAM	SCV	SCS
4.43 NTSC	4NV	4NS
BLACK/WHITE	BWV	BWS
Y/CB/CR	CBR	
Y/PB/PR	PBR	
RGB	RGB	
Digital Video signal	DIG	

4 Option (Destination, Panel Generation, etc.)

Options	OSD
Step-up D model	EHB
Regular D model	ESB
Regular A model	ERB

② SIG Mode and Screen size (by User is displayed)

- 1st and 2nd characters : Resolution of the input signal
 3rd and 4th characters : Refresh rate of the input signal
 5th character : Selection of the screen size

■ Input signal mode table for video signals (resolutions and V frequencies)

1st to 4th Character		Signal Type	Fv (Hz)	Fh (kHz)
10	50	SDTV*625i	50.000	15.750
	60	SDTV*525i	60.000	15.750
20	50	SDTV*625p	50.000	31.500
	60	SDTV*525p	60.000	31.500
30	50	HDTV*1125i	50.000	33.750
	60	HDTV*1125i	60.000	33.750
40	50	HDTV*750p	50.000	45.000
	60	HDTV*750p	60.000	45.000
50	24	HDTV*1125p	24.000	27.000
	50	HDTV*1125p	50.000	56.250
	60	HDTV*1125p	60.000	67.500

Fv: Vertical Frequency, Fh: Horizontal Frequency

■ Input signal mode table for PC signals (resolutions and V frequencies)

1st to 4th Character		Signal Type	Fv (Hz)	Fh (kHz)
C1	70	720 x 400	70.087	31.469
C2	60	640 x 480	59.940	31.469
C4	60	800 x 600	60.317	37.879
C6	60	1280 x 720	60.000	44.800
C7	60	1024 x 768	60.004	48.363
C9	60	1360 x 768	60.015	47.712
D6	60	1280 x 1024	60.000	64.000

Fv: Vertical Frequency, Fh: Horizontal Frequency

■ Current selection of the screen size

5th Character	GUI Notation	VIDEO	PC	Remarks
0	DOT BY DOT	● (*)	—	
1	4:3	●	●	
2	FULL	●	●	
3	ZOOM	●	—	
4	CINEMA	●	—	
5	WIDE	●	—	
6	FULL 14:9	●	—	
7	CINEMA 14:9	●	—	

●: supported, —: unsupported

(*): It is effective only with models having the Full HD panel.

6.2 DETAILS OF FACTORY MENU

6.2.1 INFORMATION

Operation items

No.	Function/Display	Context	RS-232C Command
6.2.1.1	VERSION (1)	The software versions for each microcomputer are displayed. (Common part)	QS1
6.2.1.2	VERSION (2)	The Flash memory versions for each device are displayed. (Individual part)	QSE
6.2.1.3	MAIN NG	The Shutdown Message ID/Event Times in Main Microcomputer are displayed.	QNG
6.2.1.4	TEMPERATURE	The Temperature/FAN rotating status in Main Microcomputer are displayed.	QMT
6.2.1.5	HOURL METER	The HOURL METER/P-COUNT information are displayed.	QS3
6.2.1.6	HDMI SIGNAL INFO 1	The Information of HDMI information files are displayed.	-
6.2.1.7	HDMI SIGNAL INFO 2		
6.2.1.8	VDEC SIGNAL INFO 1	Display the Signal Information on VDEC.	-
6.2.1.9	VDEC SIGNAL INFO 2		

6.2.1.1 VERSION (1)

1	5	10	15	20	25	30	35	40												
1		I N F O R M A T I O N						A V 1 - 3 0 1 0 1 - N T V - E H B												
		V E R S I O N (1)																		
5		I / F						- 0 7 A						0 1 A						
		M A I N						- 0 2 E 2						0 1 E						
		M U L T I P R S						- 0 2 E						0 1 A						
				P I C						- 0 2 E										
10		M O D U L E						- 0 6 A						0 1 A						
		S E Q P R S						- 0 3 W - A						0 1 A						
		P A N E L I N F O						X X X X X X X X												
15																				
16																				

Microcomputer	Item Name	Display Example (Execution program block)	Display Example (Boot block)
I/F microcomputer	I/F	-07A	01A
Main microcomputer	MAIN	-02E2	01E
Multi processor	MULTI PRS	-02E	01A
Multi processor	MULTI PIC	-02E	
Module microcomputer	MODULE	-06A	01A
Sequence processor	SEQ PRS	-03W_A	01A

Note: In the 29-32 rows, the Boot version information on each device is displayed.
In the 19-24 rows, the version of the execution program is displayed.

• **PANEL INFO:** It displays the generation of the panel, inchage and the type of the panel. For details on display values and settings, see "10: Panel Information" in "9.3.1. QS1 (PANEL STATUS)."

6.2.1.2 VERSION (2)

	1	5	10	15	20	25	30	35	40
1									
5									
15									
16									

Step-up D / Regular D

Meaning	Item Name	Display Example
DTV Hardware Version	DTV HARD	0001
User Password	PASSWORD	1234

	1	5	10	15	20	25	30	35	40
1									
5									
15									
16									

Regular A

Meaning	Item Name	Display Example
User Password	PASSWORD	1234

A



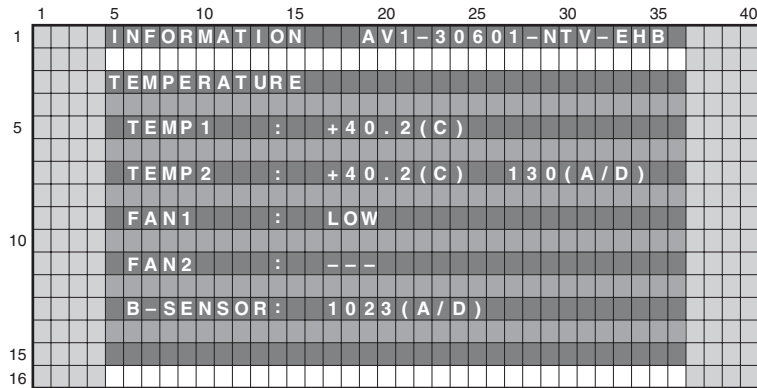
C

D

6.2.1.4 TEMPERATURE

A present temperature and the FAN rotation are displayed.

If either [←] key or [→] key is pressed, the display data is refreshed.



• Display/Meaning

TEMP1 : The temperature of the sensor on the panel side is displayed by the centigrade.

TEMP2 : The temperature conversion display is done with 10 bit the A/D input value of IF uCOM 90 pin (AN4). It is displayed by both the centigrade (C) and 8 bit A/D value.

(Remark: When temperature (C) of the sensor becomes more than a specified temperature, the shutdown start of processing.)

FAN1 : The value of the FAN rotating state is displayed.

STOP: stopped, LOW: slow speed, HIGH: high speed.

FAN2 : The value of the rotation state of FAN is displayed.

During a rotation of FAN, 8bit D/A value output from 2 pin (DA0) of IF uCOM is displayed.

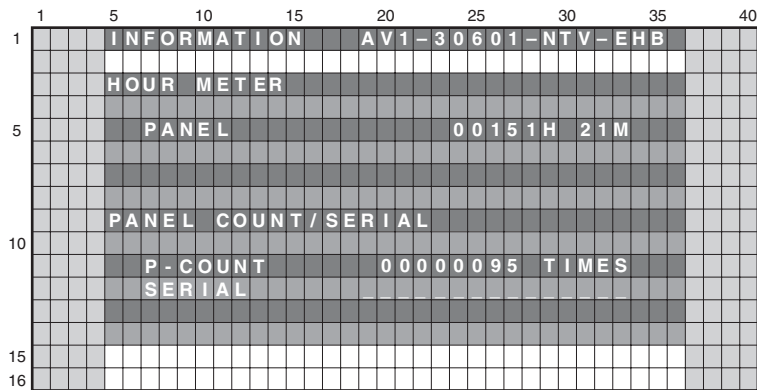
It is displayed with OFF during a stop (only for the FHD model).

B-SENSOR : The value that indicated the degree of brightness input into an Room light sensor is displayed.

AD value when the output of the Room light sensor was input into 89 pin (AN5) of IF uCOM is displayed.

However, the Regular A, D model is not displayed.

6.2.1.5 HOUR METER



• Display/Meaning

Meaning	Item Name	Display Example	Corresponding RS-232C Command
HOUR METER (PANEL)	PANEL	00151H 21M	QS3
POWER ON COUNTER	P-COUNT	00000095 TIMES	QS3
SYSTEM SERIAL	SERIAL		QS3

Note: The PANEL-side's HOUR METER/P-COUNT acquires information from the PANEL-side.

6.2.1.6 HDMI SIGNAL INFO 1

	1	5	10	15	20	25	30	35	40
1									
5									
10									
15									
16									

Displays the input signal information of HDMI terminal

Item	Meaning
PWR5V	+5 V power detection (18 pin of HDMI terminal)
VSYNC	VSYNC detection
CKDT	Clock detection
SCDT	SYNC detection
DCRPT	HDCP decryption status
AUTHEN	HDCP authentication status
MODE	HDMI mode status
BIST	----
NVAL	N value
CTSVAL	CTS value
AKSV	Shadow AKSV value
BKSV	Shadow BKSV value
IT CNT	IT content (AVI info)
EXTCOL	Extension calorimetry (AVI info)
RGV QR	RGB range (AVI info)
PIXDEP	Number of pixel/bit

6.2.1.7 HDMI SIGNAL INFO 2

1	5	10	15	20	25	30	35	40
1								
5								
10								
15								
16								

Displays input signal status of HDMI terminal

Display Item	Meaning
H RES	Number of horizontal pixels (decimal)
V RES	Number of vertical lines (decimal)
H DE	Number of effectively horizontal pixels (decimal)
V DE	Number of effectively vertical lines (decimal)
INTRL	Interlace (=INT) or progressive (=PRG)
V POL	VSYNC polarity
H POL	HSYNC polarity
AUDIO (first line)	Sampling frequency. (ex. DVD: 48kHz, CD: 44.1kHz) *1
AUDIO (second line)	PCM (PCM) or No PCM (=no PCM)
AUDIO (third line)	Quantization bit
COL SP	Color space (AVI Info) (422 or 444 or RGB) *2
COLMET	Calorimetry (AVI Info) (SD: 601, HD:709) *2
ASPECT	Aspect (AVI Info)
ACTIVE	Video active format (AVI Info)
V FMT	Video identification code (AVI Info)
PIX RP	Pixel repeat value for 2880 dot
SOURCE (first line)	Vendor name of the emission device
SOURCE (second line)	Model name of the emission device

*1: Please confirm whether to be displayed here when the sound is not emitted.

*2: There is a possibility of not suitable for the state of the source equipment when the color is amusing.

Display of HDMI FACTORY and correspondence of resolution

Please confirm the following 5 items when the picture doesn't come out.

Input Signal	FACTORY Display				
	H RES	V RES	H DE	V DE	V FMT
480i (525i) @ 60	858	262 or 263	720	240	720x480i @ 60
480p (525p) @ 60	858	525	720	480	720x480p @ 60
1080i (1125i) @ 60	2200	562 or 563	1920	540	1920x1080i @ 60
720p (750p) @ 60	1650	750	1280	720	1280x720p @ 60
1080p (1125p) @ 60	2200	1125	1920	1080	1920x1080p @ 60
576i (625i) @ 50	864	312 or 313	720	288	720x576i @ 50
576p (625p) @ 50	864	625	720	576	720x576p @ 50
1080i (1125i) @ 50	2640	562 or 563	1920	540	1920x1080i @ 50
720p (750p) @ 50	1980	750	1280	720	1280x720p @ 50
1080p (1125p) @ 50	2640	1125	1920	1080	1920x1080p @ 50
1080p (1125p) @ 24	2750	1125	1920	1080	1920x1080p @ 24

A

1

C

□

F

1

A

■ Operation Items

This is the menu screen for the adjustment of the panel. Data acquisition and value adjustment can be performed for the following items:

No.	Indication	Description of functions
6.2.2.1	PANEL INFORMATION	Data, such as the version of the microcomputer of the panel, product serial number, and statuses of memories for adjustment values for the main unit and for backup, are displayed.
6.2.2.2	PANEL WORKS	Operation data, such as accumulated pulse-meter count, accumulated hour-meter count, accumulated power-on count, and the temperature detected by the sensor, are displayed.
6.2.2.3	POWER DOWN	The power-down history is displayed, with the hour-meter values that indicate the hour values when power-downs occurred.
6.2.2.4	SHUT DOWN	The shutdown history is displayed, with the hour-meter values that indicate the hour values when shutdowns occurred.
6.2.2.5	PANEL-1 ADJ (+)	Settings of the driving pulse timing and driving voltage can be performed.
6.2.2.6	PANEL-2 ADJ (+)	White balance and ABL (power consumption) for the panel can be set.
6.2.2.7	PANEL FUNCTION (+)	The level for correction of panel degradation can be set.
6.2.2.8	ETC. (+)	Copying of backup data and clearance of various data can be performed.
6.2.2.9	RASTER MASK SETUP (+)	The mask indication (RASTER) can be set and indicated.
6.2.2.10	PATTERN MASK SETUP (+)	The mask indication (PATTERN) can be set and indicated.
6.2.2.11	COMBI MASK SETUP (+)	The mask indication (COMBI) can be set and indicated.

■ Details of indications in each layer

- In the following examples, GUI images for a 50-inch model are indicated. Although the display areas for the menu for 42-inch and 50-inch models are different, the items to be displayed are the same.

6.2.2.1 PANEL INFORMATION

- Data, such as the version of the microcomputer of the panel, product serial number, and statuses of memories for adjustment values for the main unit and for backup, are displayed. No other layers are nested below this layer, and there are no adjustment items.

		1	5	10	15	20	25	30	32
1			PANEL	FACT.		IN1-30602-RGB-JHB			
	AREA 1		PANEL	INFORMATION					
2		2	MODULE	-01A		01A			
5		3	-PRG	-01A					
		4	-DAT	-01A					
		5	SEQ PRS	-01Y		02A			
		6	-PRQ	-01Y					
		7	-PIC	-01Y					
10		8	-SEQ	520Y					
		9							
	A		SERIAL						
	B		DIG.EEP	ADJUSTED					
	C		BACKUP	NO DATA!					
15		D							
16		E							

Display area for 42-inch model

Display area for 50-inch model

■ Key operation

- <DOWN> : Shifting to PANEL WORKS
- <UP> : Shifting to COMBI MASK SETUP (+)
- <L/R> : Updating displayed information

■ Display items:

- MODULE : The version of data written in the Module microcomputer (IC3151) is indicated.
- PRG : The program version of the Module microcomputer is indicated.
- DAT : The data version of the Module microcomputer is indicated.
- SEQ-PRG : The version of data written in the Sequence LSI (IC3401) is indicated.
- PRG : The program version of the Sequence LSI is indicated.
- PIC : The Picture-data version of the Sequence LSI is indicated.
- SEQ : The sequence-data version of the Sequence LSI is indicated.
- SERIAL : The serial number of the module is indicated.
- DIG.EEP : The adjusted status of the EEPROM that is mounted on the DIGITAL Assy is indicated.
- BACKUP : The adjusted status of the EEPROM for backup that is mounted on the SENSOR Assy is indicated.

6.2.2.2 PANEL WORKS

- Data on operations, such as the accumulated pulse-meter counts, hour-meter count, power-on count, and temperature detected by the sensor, are sent back. No other layers are nested below this layer, and there are no adjustment items.

		1	5	10	15	20	25	30	32
1			PANEL	FACT.		IN1-30602-RGB-JHB			
	AREA 1		PANEL	WORKS					
2		2							
5		3	PM-B1		00000715	M			
		4	PM-B2		00000607	M			
		5	PM-B3		00000852	M			
		6	PM-B4		00000668	M			
		7	PM-B5		00000733	M			
10		8							
		9	HR-MTR		000025H	20M			
	A		P-COUNT		00000095	TIMES			
	B		TEMP1		+27.4	/	+70.8		
	C								
15		D							
16		E							

■ Key operation

- <DOWN> : Shifting to POWER DOWN
- <UP> : Shifting to PANEL INFORMATION
- <L/R> : Updating displayed information

← Temperature unit is " °C (Centigrade) ".

■ Contents of the Display item

- PM-B1 to B5: The accumulated pulse-meter counts for the 5 blocks on the screen are indicated. (the lowest-order digit represents millions of pulses.)
- HR-MTR: The hour-meter value (accumulated power-on hours) is indicated.
- P-COUNT: The accumulated power-on count is indicated.
- TEMP1: The current panel temperature and the historical maximum temperature recorded in memory are indicated. The range of temperature indication is from -50.0 to +99.9. (The temperature unit is " °C (Centigrade) ".)

6.2.2.3 POWER DOWN

- The power-down history is displayed. The last most 8 power-down histories are displayed with the hour-meter values that indicate the hours when power-downs occurred. No other layers are nested below this layer, and there are no adjustment items.

		1	5	10	15	20	25	30	32
1		PANEL	FACT.			IN1-30602-RGB-JHB			
AREA 1	2	POWER	DOWN						
5	3	1ST	2ND			000124H	23M		
4	1	X-DRV				000124H	21M		
5	2	Y-SUS	SCAN			000115H	05M		
6	3	SCAN				000107H	53M		
7	4	POWER	SCAN			000098H	47M		
8	5	ADRS				000051H	30M		
9	6	SCN5V	X-DCDC			000022H	21M		
A	7	Y-DCDC				000000H	57M		
B	8						H	M	
C									
D									
E									

Key operation

- <DOWN> : Shifting to SHUT DOWN
- <UP> : Shifting to PANEL WORKS
- <L/R> : Updating displayed information

<Causes of power-down and corresponding OSD indications>

Cause of power-down	OSD Indication	Cause of power-down	OSD Indication
POWER SUPPLY Unit	P-PWR	ADDRESS Assy	ADRS
SCAN Assy	SCAN	X DRIVE Assy	X-DRV
5 V power for SCAN Assy	SCN5V	DC/DC converter for X drive	X-DCDC
Y DRIVE Assy	Y-DRV	X-drive SUS circuit	X-SUS
DC/DC converter for Y drive	Y-DCDC	Unknown	UNKNOW
Y-drive SUS circuit	Y-SUS		

- * When power-down is confirmed, the factor is displayed as "1st", "2nd", according to the accuracy order.
- * The power-down history is not recorded when the power-down occurred at the same place and same time.

6.2.2.4 SHUT DOWN

- The shutdown history is displayed. The last most 8 shutdown histories are displayed with the hour-meter values that indicate the hours when shutdowns occurred. No other layers are nested below this layer, and there are no adjustment items.

		1	5	10	15	20	25	30	32
1		PANEL	FACT.			IN1-30602-RGB-JHB			
AREA 1	2	SHUT	DOWN						
5	3	MAIN	SUB			000124H	23M		
4	1	TMP-NG	TEMP-H			000124H	21M		
5	2	SQ-LSI	RTRY			000115H	05M		
6	3	MD-IIC	DAC2			000107H	53M		
7	4	SQ-LSI	VER-HS			000098H	47M		
8	5	MD-IIC	BACKUP			000051H	30M		
9	6	SQ-LSI	BUSY			000012H	07M		
A	7						H	M	
B	8						H	M	
C									
D									
E									

Key operation

- <DOWN> : Shifting to PANEL-1 ADJ (+)
- <UP> : Shifting to POWER DOWN
- <L/R> : Updating displayed information

- * When there is detail information when shutdown occurred, the possible defective part is displayed as Sub information.

<Cause of shut-down and corresponding OSD Indication >

Cause of shut-down (MAIN)		Cause of shut-down (SUB)	
Item	OSD Indication	Item	OSD Indication
Drive Processing IC	SQ_LSI	Communication Error	RTRY
		Drive Stop	SQNO
		Communication Busy	BUSY
		Version mismatching (H/S)	VER-HS
		Version mismatching (M/S)	VER-MS
MDU-IIC	MD-IIC	MAIN EEPROM Communication Error	EEPROM
		BACKUP EEPROM Communication Error	BACKUP
		DAC1 Communication Error	DAC1
		DAC2 Communication Error	DAC2
Abnormally in RST2 power supply	RST2	-	-
Panel temperature	TMP-NG	High temperature of the panel	TEMP-H
		Low temperature of the panel	TEMP-L

6.2.2.5 PANEL-1 ADJ (+)

- Timing and voltage for the driving pulse are set. At third line of the screen, the WB (White Balance) table and frequency table indicating operation status are displayed, and at fifteenth line of the screen, the item for the upper nested layer (PANEL-1 ADJ [+]) is displayed. Pressing the SET key shifts the screen to the next nested layer below for item selection.

		1	5	10	15	20	25	30	32
1		PANEL	FACT.			IN1-30602-RGB-JHB			
	AREA 1								[TBL1/TBL1]
2									
3									
4									
5									
6									
7									
8									
9									
A									
B									
C									
15	D	PANEL-1	ADJ	(+)					
16	E								

Key operation

- <DOWN> : Shifting to PANEL-2 ADJ (+)
- <UP> : Shifting to POWER DOWN
- <SET> : Shifting to the next nested layer

- When the screen is shifted to the next nested layer below, the item of the layer above is indicated at third line of the screen, and the item of the layer below is indicated at fifteenth line.
- The configuration of the menu screen is the same for any adjustment item that has lower layers.
- To confirm that the change in the SUS FREQ. setting has resulted in diminishing of AM radio interference in this layer, after changing the setting, turn the unit off then back on.

		1	5	10	15	20	25	30	32
1		PANEL	FACT.			IN1-30602-RGB-JHB			
	AREA 1	PANEL-1	ADJ						[TBL1/60VS]
2									
3									
4									
5									
6									
7									
8									
9									
A									
B									
C									
15	D	VOL	OFFSET	<=>					: 128
16	E								

Key operation

- <DOWN> : Shifting to the next item
- <UP> : Shifting to the previous item
- <RIGHT> : Adding by one to the adjustment/setting value
- <LEFT> : Subtracting by one from the adjustment/setting value
- <VOL+> : Adding by 10 to the adjustment/setting value
- <VOL-> : Subtracting by 10 from the adjustment/setting value
- <SET> : Determining the adjustment/setting value and shifting to the upper layer

6.2.2.7 PANEL FUNCTION (+)

- A setting for panel degradation correction can be made. Pressing the SET key shifts the screen to the next nested layer below for item selection.

		1	5	10	15	20	25	30	32
1		PANEL	FACT.			IN1-30602-RGB-JHB			
	AREA 1								
	2								
5	3								
	4								
	5								
	6								
	7								
10	8								
	9								
	A								
	B								
	C								
15	D	PANEL	FUNCTION	(+)					
16	E								

■ Key operation

- <DOWN> : Shifting to ETC.(+)
- <UP> : Shifting to PANEL-2 ADJ (+)
- <SET> : Shifting to the next nested layer

		1	5	10	15	20	25	30	32
1		PANEL	FACT.			IN1-30602-RGB-JHB			
	AREA 1	PANEL	FUNCTION						
	2								
5	3								
	4								
	5								
	6								
	7								
10	8								
	9								
	A								
	B								
	C								
15	D	R-LEVEL	<=>						
16	E								

■ Key operation

- <DOWN> : Shifting to the next item
- <UP> : Shifting to the previous item
- <RIGHT> : Adding by one to the adjustment/setting value
- <LEFT> : Subtracting by one from the adjustment/setting value
- <SET> : Determining the adjustment/setting value and shifting to the upper layer

6.2.2.8 ETC. (+)

- The setting about the backup of panel adjusting value and various data on panel operational information can be cleared. Pressing the SET key shifts the screen to the next nested layer below for item selection.

Key operation

- <DOWN> : Shifting to RASTER MASK SETUP (+)
 <UP> : Shifting to PANEL FUNCTION (+)
 <SET> : Shifting to the next nested layer

Key operation

- <DOWN> : Shifting to the next item
 <UP> : Shifting to the previous item
 <RIGHT> : Adding by one to the adjustment/setting value
 <LEFT> : Subtracting by one from the adjustment/setting value
 <SET> : Determining the adjustment/setting value and shifting to the upper layer

6.2.2.9 RASTER MASK SETUP (+)

- This menu set the RASTER MASK and the drive sequence at RASTER MASK state. Pressing the SET key shifts the screen to the next nested layer below for item selection.

		1	5	10	15	20	25	30	32																							
1			P	A	N	E	L	F	A	C	T	.			I	N	1	-	3	0	6	0	2	-	R	G	B	-	J	H	B	
		A	R	E	A	1																										
		2																														
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10		8																														
		9																														
		A																														
		B																														
		C																														
15		D	R	A	S	T	E	R	M	A	S	K	S	E	T	U	P		(	+	)											
16		E																														

■ Key operation

- <DOWN> : Shifting to PATTERN MASK SETUP (+)
- <UP> : Shifting to ETC. (+)
- <SET> : Shifting to the next nested layer

		1	5	10	15	20	25	30	32																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												</
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■ Key operation

- <DOWN> : Shifting to the next MASK
- <UP> : Shifting to the previous MASK
- <RIGHT> : Changing MASK sequence (+)
- <LEFT> : Changing MASK sequence (-)
- <SET> : Determining the adjustment/setting value and shifting to the upper layer

- The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V and 60P, using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.

A 6.2.2.10 PATTERN MASK SETUP (+)

- This menu set the PATTERN MASK and the drive sequence at PATTERN MASK state. Pressing the SET key shifts the screen to the next nested layer below for item selection.

			1		5		10		15		20		25		30	32																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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■ Key operation

- <DOWN> : Shifting to COMBI MASK SETUP (+)
- <UP> : Shifting to RASTER MASK SETUP (+)
- <SET> : Shifting to the next nested layer

			1	5	10	15	20	25	30	32				
1			PANEL FACT . IN1-30602-RGB-JHB											
	AREA 1	PATTERN MASK SETUP [TBL1/60VS]												
	2													
5	3													
	4													
	5													
	6													
	7													
10	8													
	9													
	A													
	B													
	C													
15	D	PTN MASK 01 : 60 V												
16	E													

■ Key operation

- <DOWN> : Shifting to the next MASK
- <UP> : Shifting to the previous MASK
- <RIGHT> : Changing MASK sequence (+)
- <LEFT> : Changing MASK sequence (-)
- <SET> : Determining the adjustment/setting value and shifting to the upper layer

- D
- The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V and 60P, using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.

6.2.2.11 COMBI MASK SETUP (+)

- This menu set the COMBI MASK and the drive sequence at COMBI MASK state. Pressing the SET key shifts the screen to the next nested layer below for item selection.

		1	5	10	15	20	25	30	32
1		PANEL	FACT.			IN1-30602-RGB-JHB			
	AREA 1								[TBL1/60VS]
2									
3									
4									
5									
6									
7									
8									
9									
A									
B									
C									
15	D	COMBI	MASK	SETUP	(+)				
16	E								

Key operation

- <DOWN> : Shifting to PANEL INFORMATION
- <UP> : Shifting to PATTERN MASK SETUP (+)
- <SET> : Shifting to the next nested layer

		1	5	10	15	20	25	30	32
1		PANEL	FACT.			IN1-30602-RGB-JHB			
	AREA 1	COMBI	MASK	SETUP					[TBL1/60VS]
2									
3									
4									
5									
6									
7									
8									
9									
A									
B									
C									
15	D	CMB	MASK	01					: 60V
16	E								

Key operation

- <DOWN> : Shifting to the next MASK
- <UP> : Shifting to the previous MASK
- <RIGHT> : Changing MASK sequence (+)
- <LEFT> : Changing MASK sequence (-)
- <SET> : Determining the adjustment/setting value and shifting to the upper layer

- The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V and 60P, using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.

6.2.3 OPTION

Operation item

A

No.	Function	Content	RS-232C
6.2.3.1	EDID WRITE MODE ⇔	DISABLE ⇔ ENABLE	----
6.2.3.2	CH PRESET ⇔	USER ⇔ FACTORY	----
6.2.3.3	SYNC DET (+)	Exclusively used for technical analysis	----

6.2.3.1 EDID WRITE MODE <=>

Exclusively used for production line.

6.2.3.2 CH PRESET <=>

Exclusively used for production line.

6.2.3.3 SYNC DET (+)

Exclusively used for technical analysis (details omitted).

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6.2.4 INITIALIZE

Operation item

No.	Function	Content	RS-232C
6.2.4.1	SIDE MASK LEVEL (+)	Configure the color of the side mask.	SML
6.2.4.2	FINAL SETUP (+)	Initialize flash memorys on virgin product status	FST
6.2.4.3	Wide XGA AUTO <=>	Exclusively used for technical analysis.	---

6.2.4.1 SIDE MASK LEVEL (+)

1	5	10	15	20	25	30	35	40
1	INITIALIZE	AV1-30601-NTV-EHB						
5								
10								
15	SIDE MASK LEVEL (+)							
16								

To configure sidemask level (To adjust the values, input signal is required).

Display	Content	RS-232C
SIDE MASK LEVEL <=>	Adjust Side Mask level (Adjustable range: 000 to 255)	SML

6.2.4.2 FINAL SETUP (+)

1	5	10	15	20	25	30	35	40
1	INITIALIZE	AV1-30601-NTV-EHB						
5	FINAL SETUP							
10								
15	DATA RESET <=>	: NO						
16								

- To reset each memory values to factory default values. Factory command is "FST".
- When the configuration is set to <NO> and the [ENTER/SET] key is pressed, no action is taken and the menu returns to previous screen.
- When the configuration is set to <YES> and the [ENTER/SET] key is pressed for 5 seconds, the reset action executes.

Be sure to disconnect and connect the AC cable after FINAL SETUP.

When replacing the MAIN Assy, the FINAL SETUP is required.

6.2.4.3 Wide XGA AUTO <=>

Exclusively used for technical analysis (details omitted).

1234

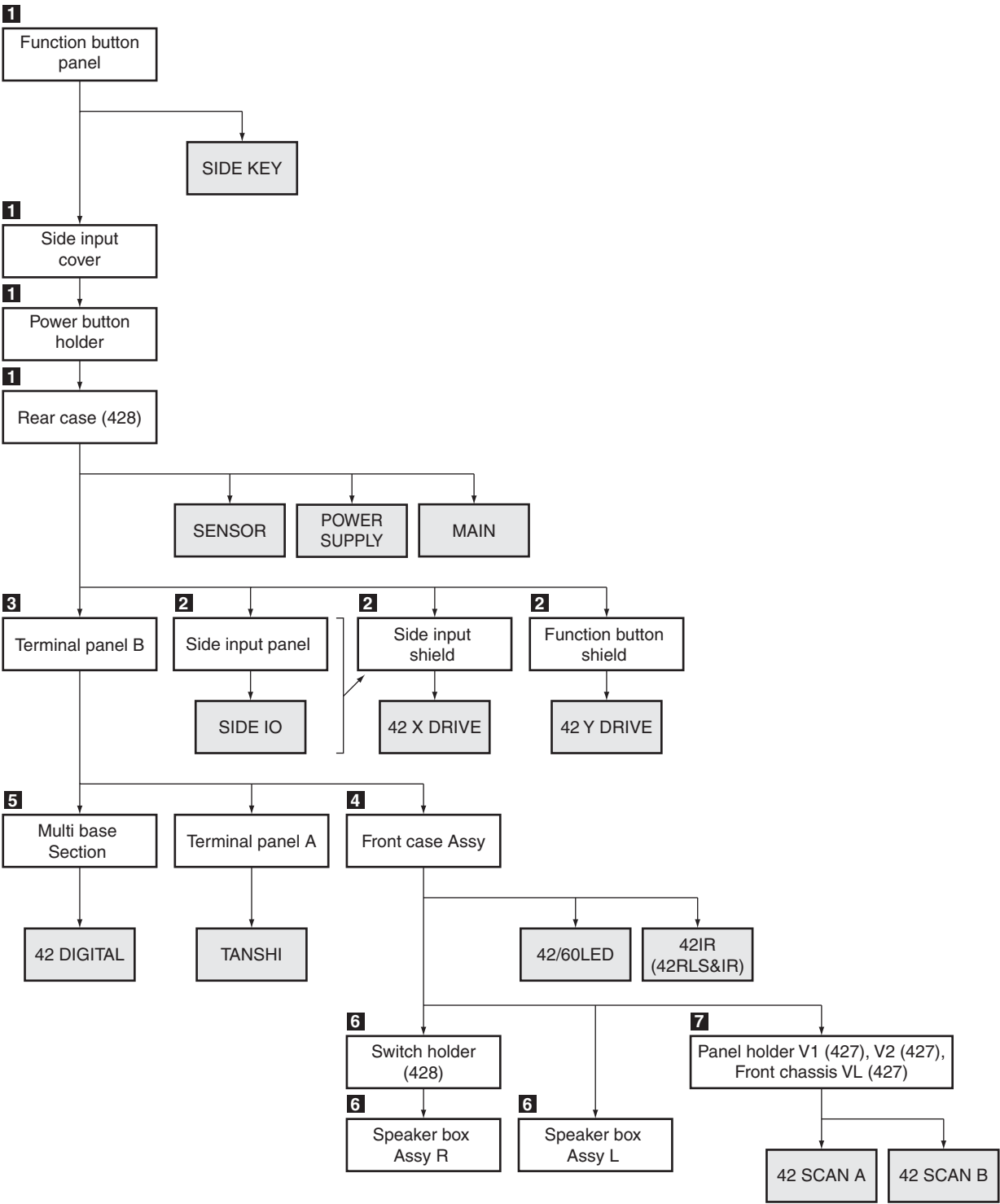
7. DISASSEMBLY

7.1 CHART OF REMOVAL ORDER FOR THE MAIN PARTS AND BOARDS

Note: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

Chart of removal order for the main parts and boards

It is efficient to proceed with removal of the main parts and boards in the order shown in the chart below:



Disassembly

1 Rear Case (428)

● Function button panel

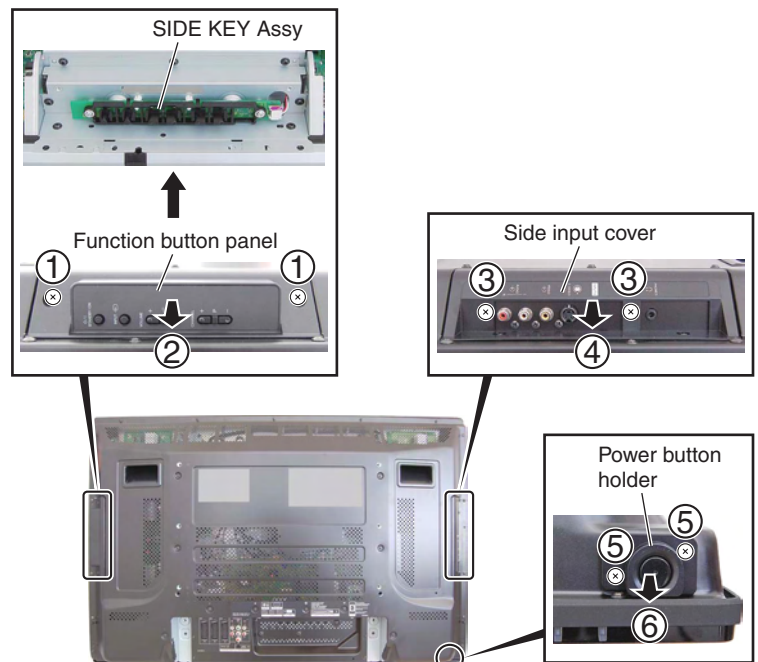
- ① Remove the two screws.
- ② Remove the function button panel.

● Side input cover

- ③ Remove the two screws.
- ④ Remove the side input cover.

● Power button holder

- ⑤ Remove the two screws.
- ⑥ Remove the power button holder.



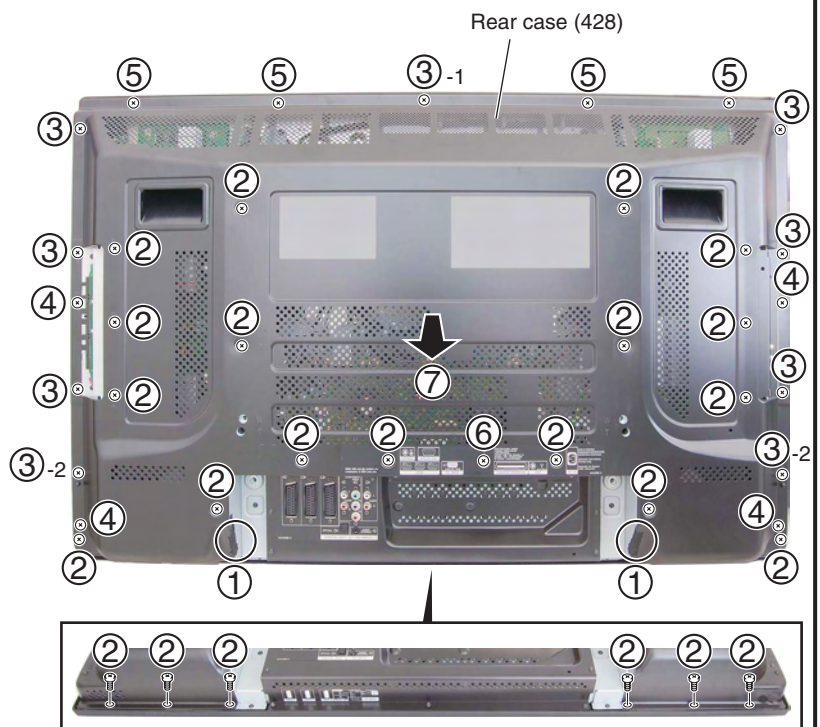
● Rear case (428)

- ① Remove the two protect sheets C.
- ② Remove the 23 screws. (AMZ30P060FTB)
- ③ Remove the nine screws. (TBZ40P080FTB)
- ④ Remove the four screws. (ABA1332)
- ⑤ Remove the four screws. (BBZ40P160FTB)
- ⑥ Remove the one screw. (ABA1341)
- ⑦ Remove the rear case (428).

■ Tightening sequence for the screws when assembling

When assembling the Rear Case (428), tighten the screws in the following sequence:

1. Tighten the screw (③-1).
2. Tighten the two screws (③-2).
3. Tighten other screws.



2 Access to PCB Assys

● SIDE IO Assy

- ① Remove the four screws.
- ② Remove the two screws.
- ③ Remove the three screws.
- ④ Remove the side input panel.

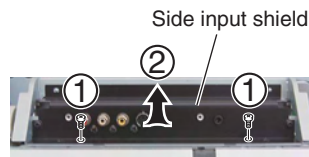
● 42 X DRIVE Assy

- ① Remove the two screws.
- ② Remove the side input shield with PCB.
- ③ Diagnose the 42 X DRIVE Assy.

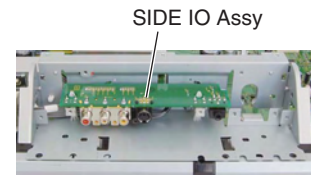
● 42 Y DRIVE Assy

- ① Remove the two screws.
- ② Remove the function button shield with PCB.
- ③ Diagnose the 42 Y DRIVE Assy.

• For 42 X DRIVE Assy

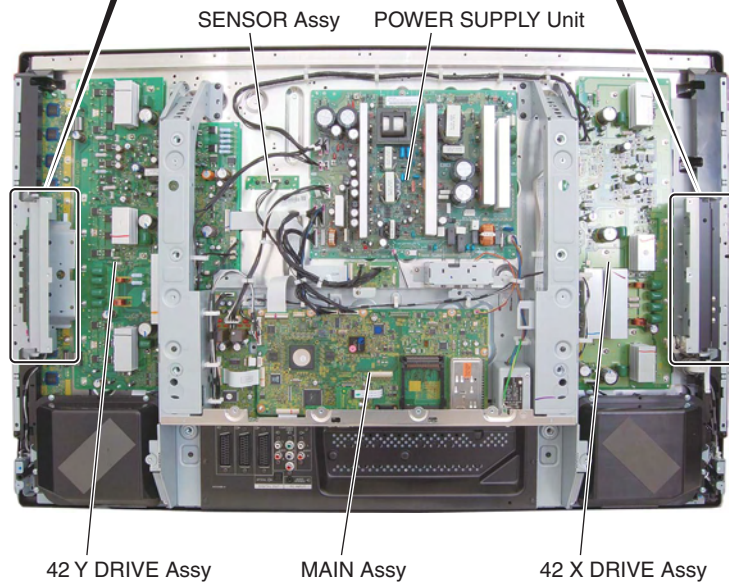
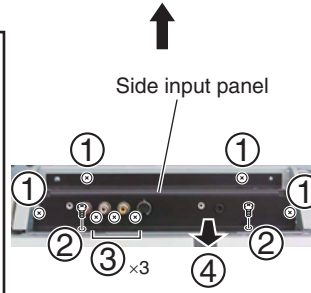
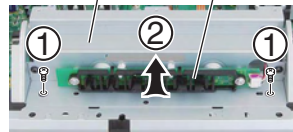


• For SIDE IO Assy



• For 42 Y DRIVE Assy

Function button shield SIDE KEY Assy



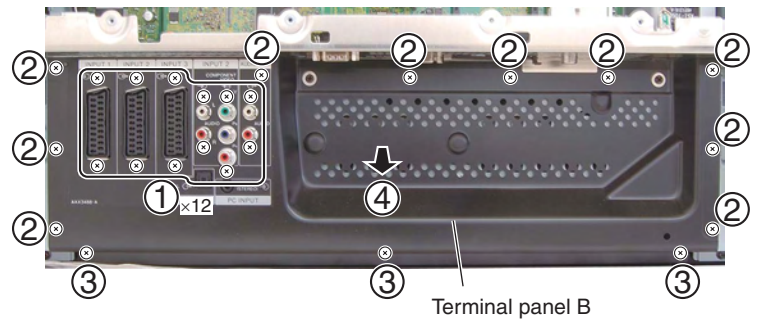
■ How to remove the bridge connector connecting between the MAIN and TANSHI Assys

- (1) Grip the two short edges of the connector with longnose pliers.
- (2) Insert a finger between the longnose pliers and the board to protect the board and the mounted parts on the board from accidental damage by the pliers then, using your finger as a fulcrum and the pliers as a lever, pry the connector upward to remove it.



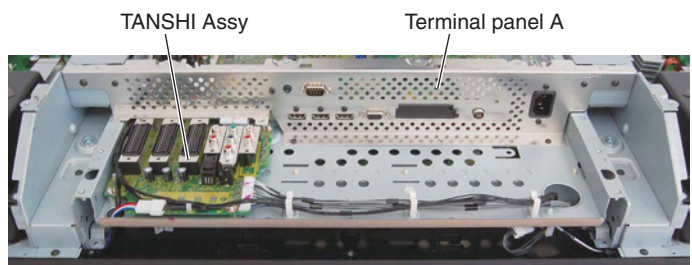
3 Terminal Panel B

- ① Remove the 12 screws.
- ② Remove the 10 screws.
- ③ Remove the three screws.
- ④ Remove the terminal panel B.



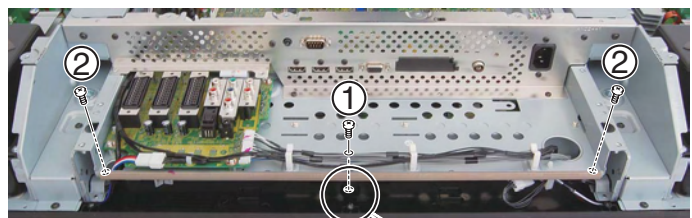
Note:

The wiring shown in the photo is different from the actual wiring, because the product in the photo is a prototype. Upon servicing, be sure to restore the original wiring of the unit after repair work.



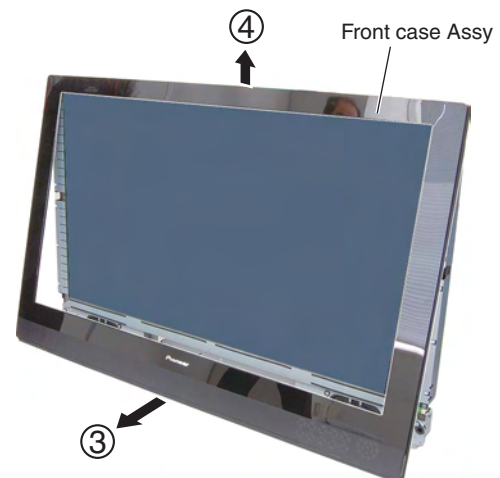
4 Front Case Assy

- ① Remove the one screw.
- ② Remove the two screws.



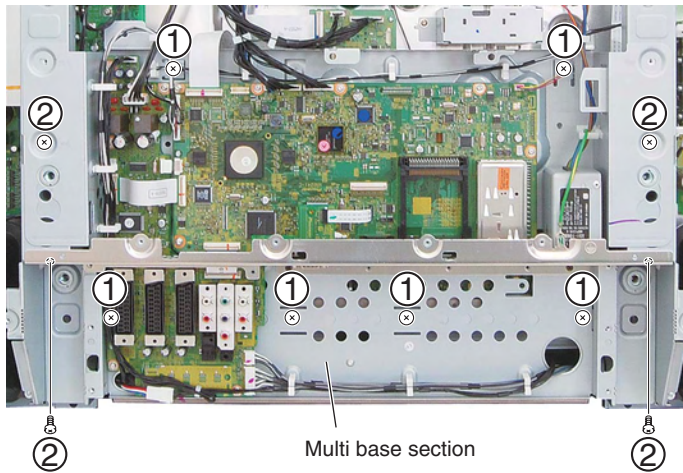
Be sure not to lose the front collar.

- ③ Pull the lower part of the Front case Assy toward you and out.
- ④ Remove the Front case Assy, by pulling it upward.

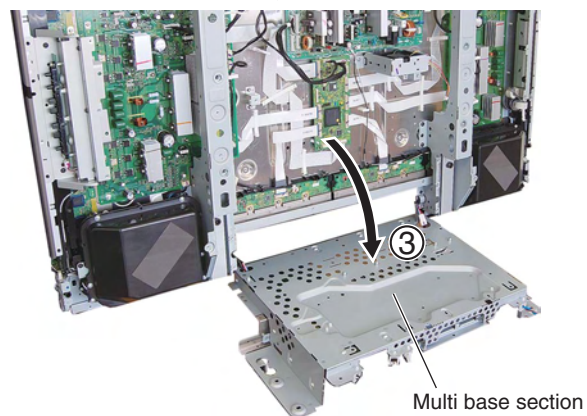


5 Access to 42 DIGITAL Assy

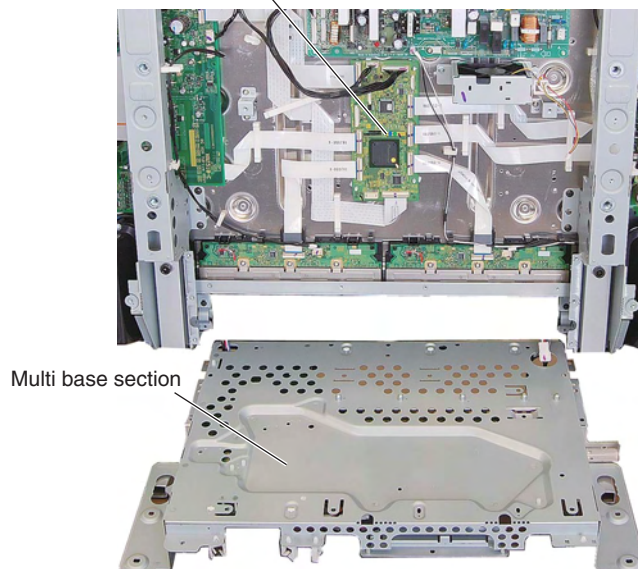
- ① Remove the six screws.
- ② Remove the four screws.



- ③ Lift the Multi base section to the direction of the arrow.



42 DIGITAL Assy



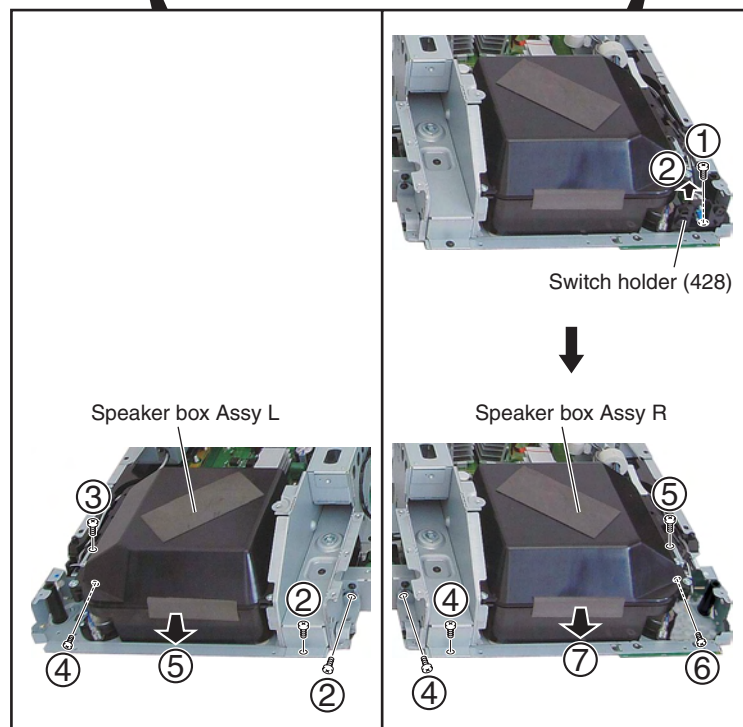
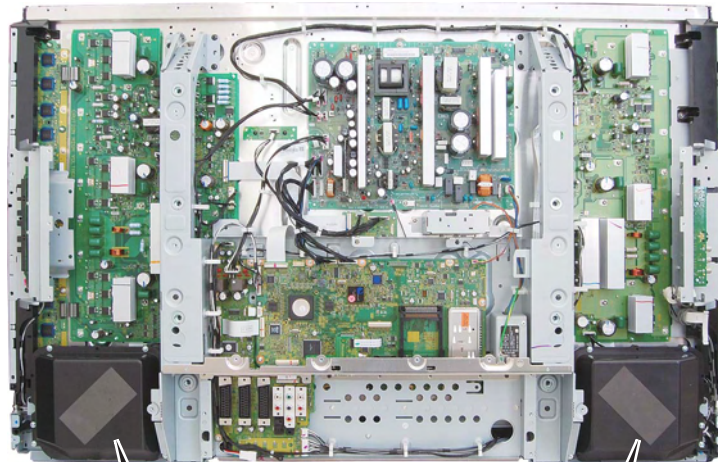
6 Speaker Box Assy L and R

● Speaker Box Assy L

- ① Disconnect cables, connectors, as required.
- ② Remove the two screws.
- ③ Remove the one screw.
- ④ Remove the one screw.
- ⑤ Remove the speaker box Assy L.

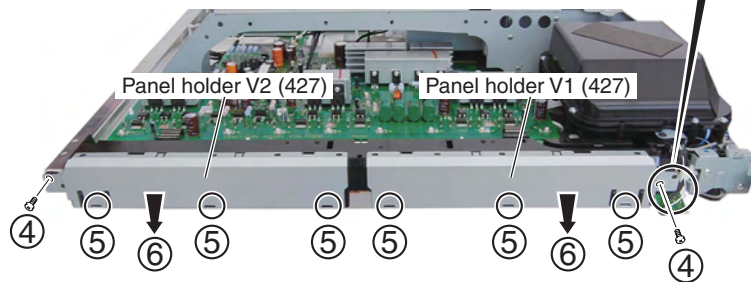
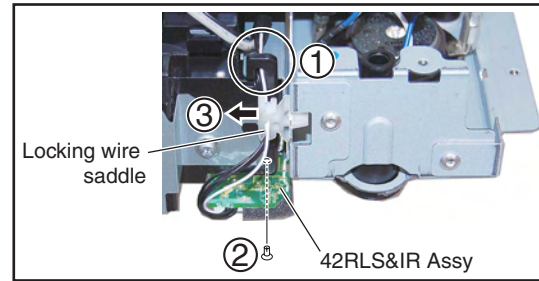
● Speaker Box Assy R

- ① Remove the one screw.
- ② Remove the switch holder (428).
- ③ Disconnect cables, connectors, as required.
- ④ Remove the two screws.
- ⑤ Remove the one screw.
- ⑥ Remove the one screw.
- ⑦ Remove the speaker box Assy R.

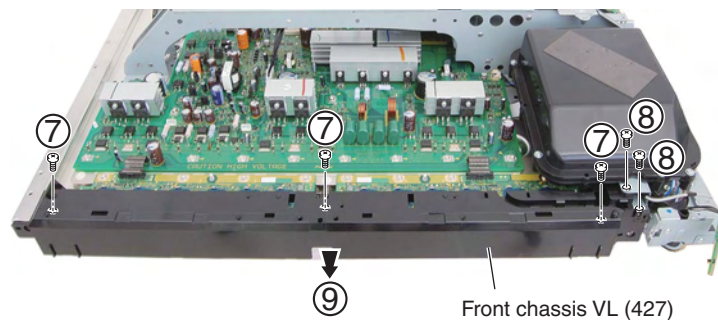


7 Exchange of SCAN IC

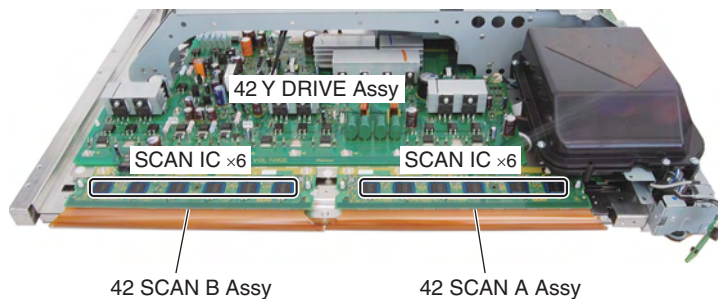
- ① Loosen the jumper wire.
- ② Remove the 42RLS&IR Assy by removing the one nylon rivet.
- ③ Remove the locking wire saddle.
- ④ Remove the two screws.
- ⑤ Unhook the six hooks.
- ⑥ Remove the panel holders V1 (427) and V2 (427).



- ⑦ Remove the three screws.
- ⑧ Remove the two screws.
- ⑨ Remove the front chassis VL (427).



Exchange



8. EACH SETTING AND ADJUSTMENT



1. At shipment, the unit is adjusted to its best conditions. Normally, it is not necessary to readjust even if an assembly is replaced. If the adjustment is shifted or if it becomes necessary to readjust because of part replacement, etc., perform the adjustment as described below.
2. Any value changed in Service/Factory mode will be stored in memory as soon as it is changed. Before readjustment, take note of the original values for reference in case you need to restore the original settings.
3. Use a stable AC power supply.

8.1 ADJUSTMENT REQUIRED WHEN THE UNIT IS REPAIRED OR REPLACED

■ When any of the following assemblies is replaced

POWER SUPPLY Unit	➡	Refer to “8.3 HOW TO CLEAR HISTORY DATA”.
DIGITAL Assy	➡	Writing of backup data is required. Refer to the “8.2 BACKUP OF THE EEPROM (DIGITAL ASSY)”.
X DRIVE Assy	➡	No adjustment required
Y DRIVE Assy	➡	No adjustment required
Service Panel Assy	➡	Refer to “8.3 HOW TO CLEAR HISTORY DATA” and “8.4 ADJUSTMENTS WHEN THE SERVICE PANEL ASSY IS REPLACED”.
MAIN Assy (*)	➡	No adjustment required
SENSOR Assy	➡	Writing of backup data is required. Refer to the “8.2 BACKUP OF THE EEPROM (DIGITAL ASSY)”.
Other assemblies	➡	No adjustment required

Note (*): When replacing the MAIN Assy, be sure to perform the FINAL SETUP.

A

Notes on replacing parts

For the parts described in the list below, replacement is required for the whole Assy, not only the defective part.

If any part listed below is identified as defective and needs replacement, replace the whole Assy, and make necessary adjustments after replacement.

Reason: The whole Assy must be replaced, because adjustments and data rewriting for the Assy at the level of production line are required.

PCB Assy No.	Assy Name	Parts that Require Whole-Assy Replacement		
		Ref No.	Function Name	Part No.
AWV2461 (PDP-428XD and PDP-508XD) AWV2462 (PDP-4280XD and PDP-5080XD) AWV2463 (PDP-4280XA and PDP-5080XA)	MAIN Assy	IC4601	AV switch	R2S11006FT
		IC4701	RGB switch	R2S11001FT
		IC4703	EEPROM	BR24L01AFJ-W
		IC4801	MAIN VDEC	CM0048BF
		IC5001	A/D Converter	AD9985KSTZ-110
		IC5102	EEPROM	BR24L02FV-W
		IC5103	EEPROM	BR24L02FV-W
		IC5203	EEPROM	BR24L02FV-W
		IC8204	Flash ROM	AGC1050
		IC8301	Flash UCOM	AGC1037
		IC8602	Flash ROM	AGC1040 (for AWV2463)
		IC8602	Flash ROM	AGC1041 (for AWV2461, AWV2462)
AWV2452, AWV2447	X DRIVE Assy	• Parts of X D-D CON BLOCK		
AWV1262, AWV1260	Y DRIVE Assy	• Parts of Y VF D-D CON BLOCK • Parts of Y MAIN D-D CON BLOCK 1 • Parts of Y MAIN D-D CON BLOCK 2		

D

POWER SUPPLY Unit



The assembly must be replaced as a unit, and no part replacement is allowed.

MAIN Assy



No adjustment is required after replacement of parts other than those mentioned above.

DIGITAL Assy



No adjustment is required after replacement of parts other than those mentioned above.

X DRIVE Assy



No adjustment is required after replacement of parts other than those shown in "8.5 ADJUSTMENTS WHEN THE DRIVE ASSYS ARE REPLACED."

E

Y DRIVE Assy



No adjustment is required after replacement of parts other than those shown in "8.5 ADJUSTMENTS WHEN THE DRIVE ASSYS ARE REPLACED."

ADDRESS Assy



No adjustment required

SENSOR Assy



No adjustment is required after replacement of parts other than those mentioned above.

TANSHI Assy



No adjustment required

F

8.2 BACKUP OF THE EEPROM (DIGITAL ASSY)

Outline

Adjustment data are stored in the EEPROM (IC3156/4K) on the DIGITAL Assy in the production process. Those adjustment data are also automatically stored in the EEPROM (for backup: IC3652) on the SENSOR Assy.

If the DIGITAL Assy is replaced, those adjustment data for backup can be copied from the EEPROM on the SENSOR Assy to a new DIGITAL Assy.

Backed up data

- Drive voltage adjustment value
- Hour-meter count
- Pulse-meter count
- Panel white balance adjustment value
- Serial No.
- Drive waveform adjustment value
- P-ON counter value
- PD/SD histories

How to copy backup data

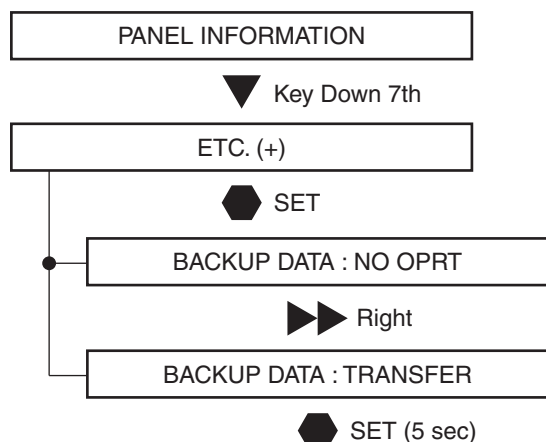
1. When the DIGITAL Assy is replaced with one for service (usual service)

Adjustment data can be restored by copying the data backed up in the SENSOR Assy to the EEPROM on a new DIGITAL Assy.

The EEPROM on the new DIGITAL Assy has no adjustment data, and the EEPROM for backup in the SENSOR Assy has adjustment data. After replacing the DIGITAL Assy, enter PANEL FACT. mode, display the PANEL INFORMATION page, then check if "NO DATA!" is set for "DIG. EEP" and "ADJUSTED" is set for "BACKUP". Then, proceed in the following steps:

(1) Copying, using the Factory menu

- ① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.
- ② Turn on the power, using the remote control unit, then enter Panel Factory mode.
Copy the backup data, as shown in the figure below.



- ③ Turn the power off.
- After the DIGITAL Assy is replaced with one for service, be sure to check if "NO DATA!" is set for "DIG. EEP" on the PANEL INFORMATION page of the PANEL FACT. mode.
- If copying of the backup data fails in the above procedure, the red LED lights, and the blue LED flashes, as a warning that no backup data were copied.
- If both the DIGITAL and SENSOR Assys are to be replaced, first replace the SENSOR Assy, turn the unit on and back off again, then replace the DIGITAL Assy.

(2) Copying, using the RS-232C commands

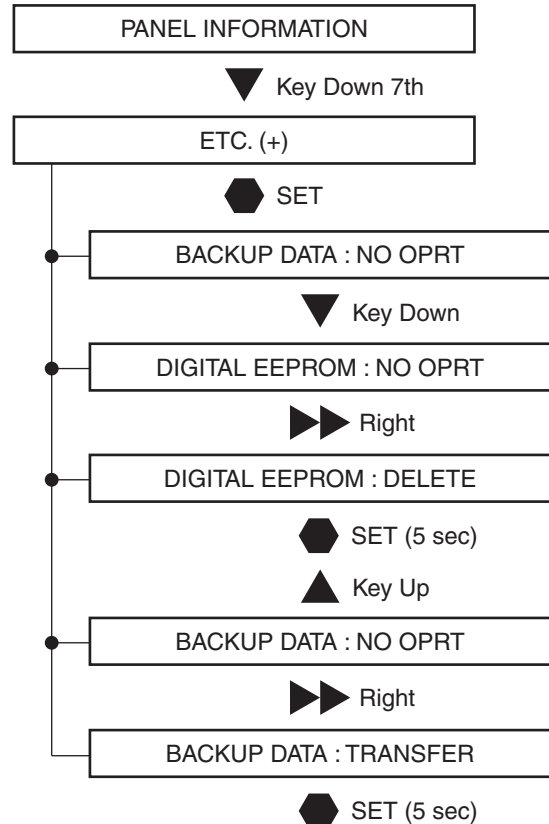
- ① Turn on the unit, using the remote control unit or by issuing the PON command. Then issue the FAY command.
- ② Issue the BCP command to transfer the data stored in the EEPROM for backup.
- ③ Turn the power off.

2. When a secondhand DIGITAL Assy that had been mounted in another product is to be reused

As adjustment data for another product are already stored in the secondhand DIGITAL Assy, first delete those data then copy the backup data stored in the EEPROM on the SENSOR Assy.

(1) Copying, using the Factory menu

- ① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.
- ② Turn on the power, using the remote control unit, then enter Panel Factory mode.
Copy the backup data, as shown in the figure below.



- ③ Turn the power off.

Note:

If the secondhand DIGITAL Assy is mounted in the product then the unit is turned on then back off again, the data in the EEPROM on the DIGITAL Assy are copied over the EEPROM in the SENSOR Assy. Thus the backup data can never be restored. During the first power-on after the DIGITAL Assy is replaced, be sure to enter Factory mode to copy the backup data. Or, before removing the secondhand DIGITAL Assy from the original product, delete the adjustment data on it, using the Factory mode (DIGITAL EEPROM: DELETE), mount it to the product to be repaired, then copy the data from the backup EEPROM.

(2) Copying, using the RS-232C commands

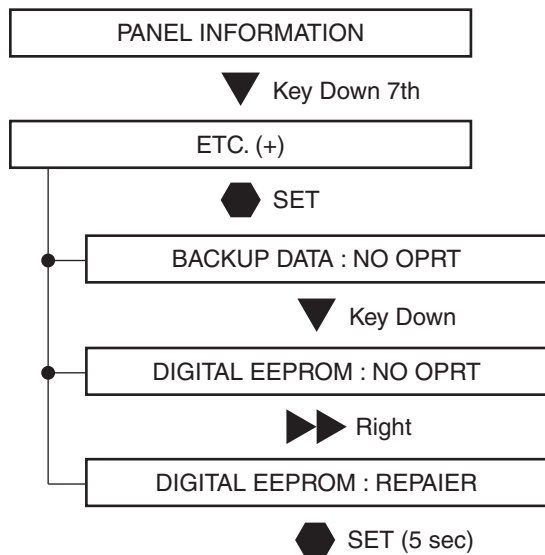
- ① Turn on the unit, using the remote control unit or by issuing the PON command. Then issue the FAY command.
- ② Issue the UAJ command to delete data stored in the EEPROM on the DIGITAL Assy.
- ③ Issue the BCP command to transfer the data stored in the EEPROM for backup.
- ④ Turn the power off.

3. In a case where normal backup data are not stored in the backup EEPROM because the EEPROM on the DIGITAL Assy is defective, etc., and where manually adjusted values are to be applied to the product

Note: In this section, it is assumed that settings for various items have been completed, using Factory menu or RS-232C commands.

(1) Method using the Factory menu

- ① Set various setting/adjustment values.
- ② Proceed in the following steps.



- ③ Turn the power off.

Note:

When a DIGITAL Assy with an EEPROM in which adjustment data are stored is mounted, this step is not required after manual adjustment. ("DIGITAL EEPROM: REPAIR" is not indicated.)

(2) Method using the RS-232C commands

Issue the FAJ command.

8.3 HOW TO CLEAR HISTORY DATA

■ Clearance of various logs after the Assys are replaced

Besides adjustment data, data on accumulated power-on time and logs on defective parts of the product are backed up. Some of those data must be cleared after the Assys are replaced for service.

(1) Clearance of logs, using the RS-232C commands

Item	Content	When the Panel is replaced	When the POWER SUPPLY Unit is replaced	When the Other parts is replaced	RS-232C Commands
Hour-meter	Accumulated power-on time	Must be cleared	No need to be cleared	No need to be cleared	CHM
Pulse-meter	Accumulated number of pulses emitted	Must be cleared (mandatory)	No need to be cleared	No need to be cleared	CPM
Shutdown history	Cause of an SD and hour-meter count	Must be cleared	No need to be cleared	No need to be cleared	CSD
Power-down history	Cause of an PD and hour-meter count	Must be cleared	No need to be cleared	No need to be cleared	CPD
Power-on counter	Relay-on count	No need to be cleared	Must be cleared (mandatory)	No need to be cleared	CPC
MAX TEMP	Historical max. temperature	Must be cleared	Must be cleared	Must be cleared	CMT

Notes:

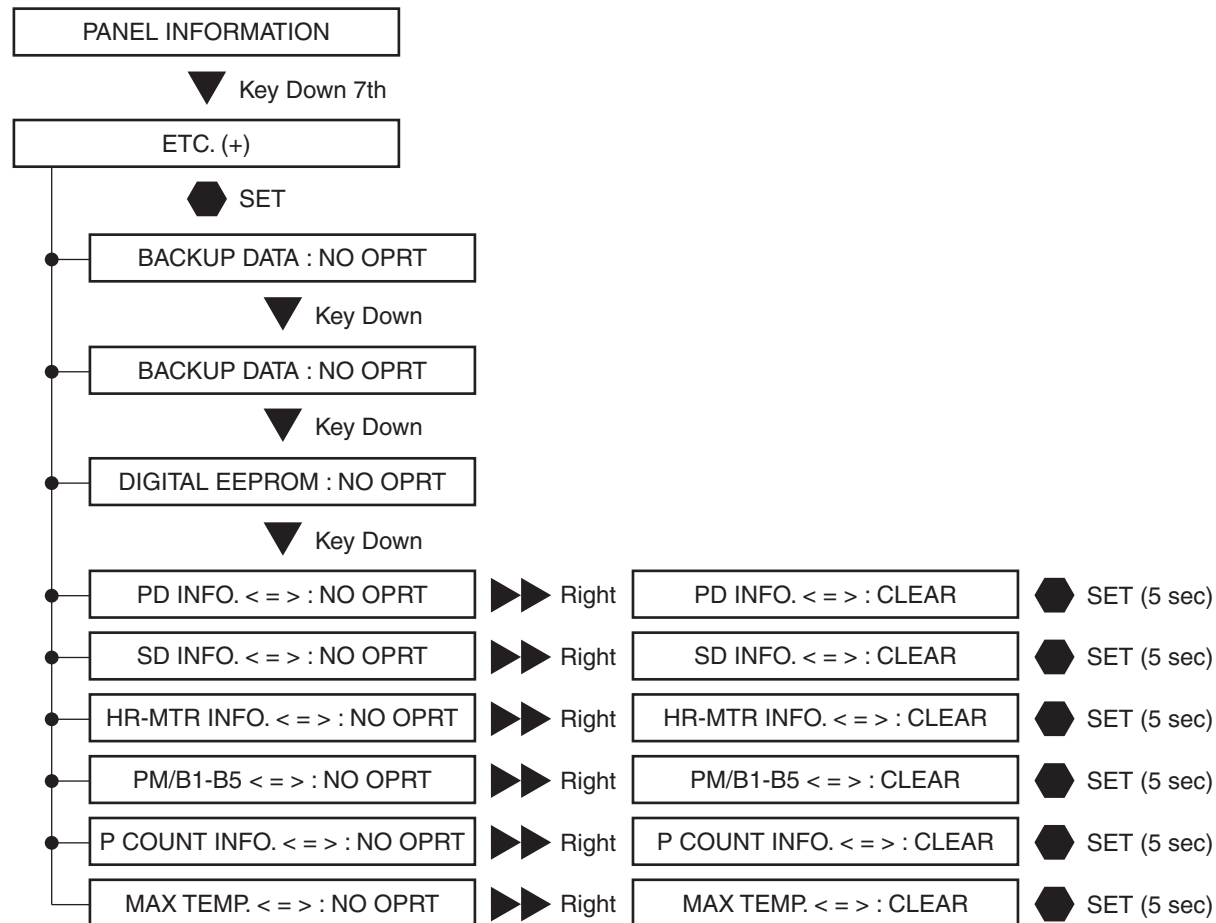
- As the pulse-meter count is used for each correction function, it must be cleared when an Assy relevant to correction functions is replaced.
- When clearing logs, using the RS-232C commands, first enter Factory mode (by issuing FAY or PFY), then issue the corresponding command.

(2) Clearance of logs, using the Factory menu

① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.

② Turn on the power, using the remote control unit, then enter Panel Factory mode.

Delete various logs, as shown in the figure below.



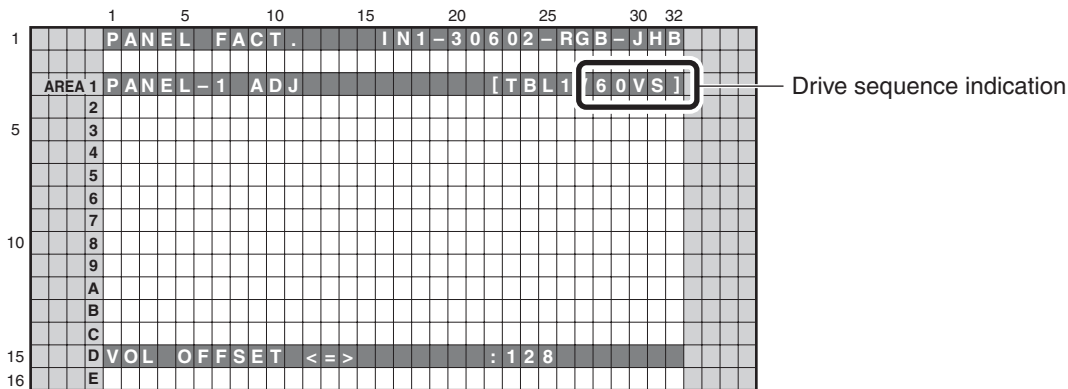
③ Turn the power off.

After the panel is replaced with one for service, voltage margin adjustment is required.

[Preparation]

Basically, voltage margin adjustment is performed using the Panel Factory menu.
 After the panel is replaced and the unit is turned on, clear the pulse meter first.
 For details on how to clear the pulse meter, see "8.3 HOW TO CLEAR HISTORY DATA".

- *1: As various corrections are made referring to the pulse-meter count to calculate how long the panel has been used, if adjustment of the panel for service is performed without clearing the pulse-meter count, proper adjustments will not be performed.
- *2: The drive sequence for 60-Hz video is used for adjustment. When adjustment is made using the Panel Factory menu, the current drive sequence is displayed on the screen, as shown in the figure below. Make sure that 60VS is always indicated during adjustment.



Example of the On-Screen display during Panel Factory mode

[Supplement]

In the "PANEL-1ADJ" layer, the Panel White Balance value is reset to default, Panel Gamma is set to Straight, and Noise is set to OFF.
 In this case, "---/****" (**** represents the current drive sequence) is displayed on the third line of the On-Screen display during Panel Factory mode.

- If adjustment is performed using RS-232C commands, the following commands must be transmitted for preparation:
- [PAV S00]: To set panel drive mode to Factory
 - [VFQ S03]: To set Drive Sequence to Video 60 Hz
 - [WBI S01]: To temporarily reset the Panel WB adjustment value to default (WBI S00 cancels this setting.)
 - [PGR S00]: To set the gamma R value to that for Factory mode
 - [PGG S00]: To set the gamma G value to that for Factory mode
 - [PGB S00]: To set the gamma B value to that for Factory mode
 - [DIZ S03]:Dither ON,L dither ON, noise OFF

*: If the unit is shut down during the above adjustment flow, resend the above commands from the beginning.

A

Overview

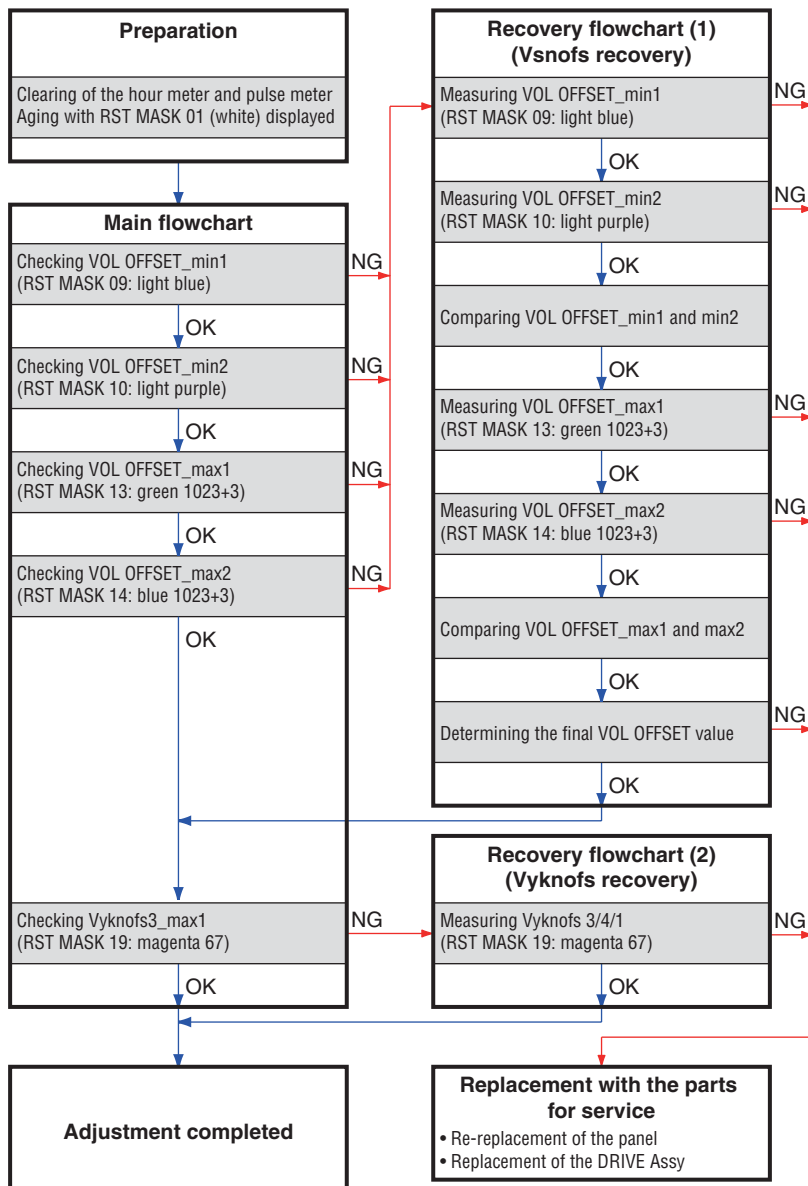
B

C

D

E

F

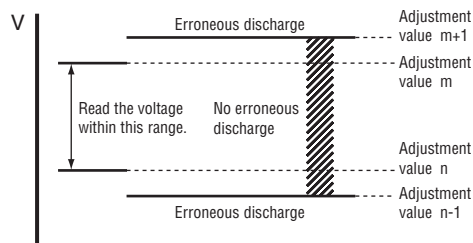


Note on voltage calculation

When calculating the setting voltage, round off to get rid of the fractional part.

Range of margin measuring

Read the voltage within the hysteresis (stricter value).



Definition of limits for the voltage margins (abnormal lit/dead cells)

Abnormal lit cells:

- Five or fewer abnormal cells on the whole screen
- Two or fewer abnormal cells within a radius of 1 cm

Abnormal dead cells

- Fifteen or fewer abnormal cells on the whole screen
- Two or fewer abnormal cells within a radius of 1 cm

*: Abnormal cells visually recognizable at a distance of 1 meter from the panel must be counted.

*: Cells displayed abnormally for less than one second are not counted as abnormal cells.

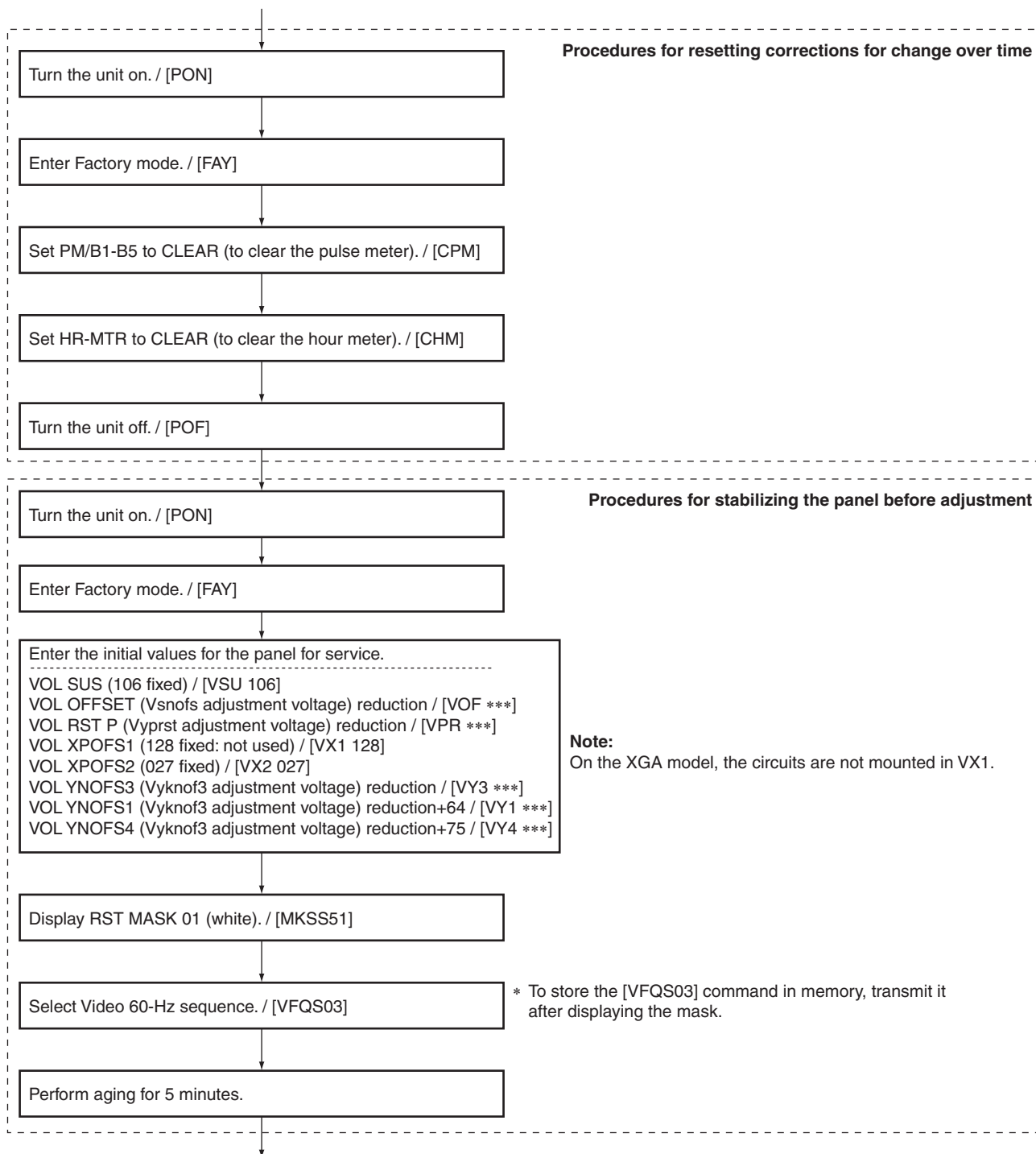
Definition of tones for the measuring signals

XGA signal (1024*768)/Video 60-Hz sequence/Dither: ON, L dither: ON, noise: OFF

White	RST MASK 01 (R 1023 /G 1023 /B 1023)
Light blue	RST MASK 09 (R 648 /G 1023 /B 1023)
Light purple	RST MASK 10 (R 1023 /G 648 /B 1023)
Green 1023+3	RST MASK 13 (R 137 /G 1023 /B 137)
Blue 1023+3	RST MASK 14 (R 137 /G 648 /B 1023)
Magenta 67	RST MASK 19 (R 67 /G 0 /B 67)

Preparation before adjustment

[Replacement with the panel for service is completed.]



[To the main flowchart (1)]

Note: If you perform the adjustment by RS-232C commands, the following commands must be added before going to the main flowchart (1):

[PAV S00]: To set panel drive mode to Factory

[WBI S01]: To temporarily reset the Panel WB adjustment value to default (WBI S00 cancels this setting.)

[PGR S00]: To set the gamma R value to that for Factory mode

[PGG S00]: To set the gamma G value to that for Factory mode

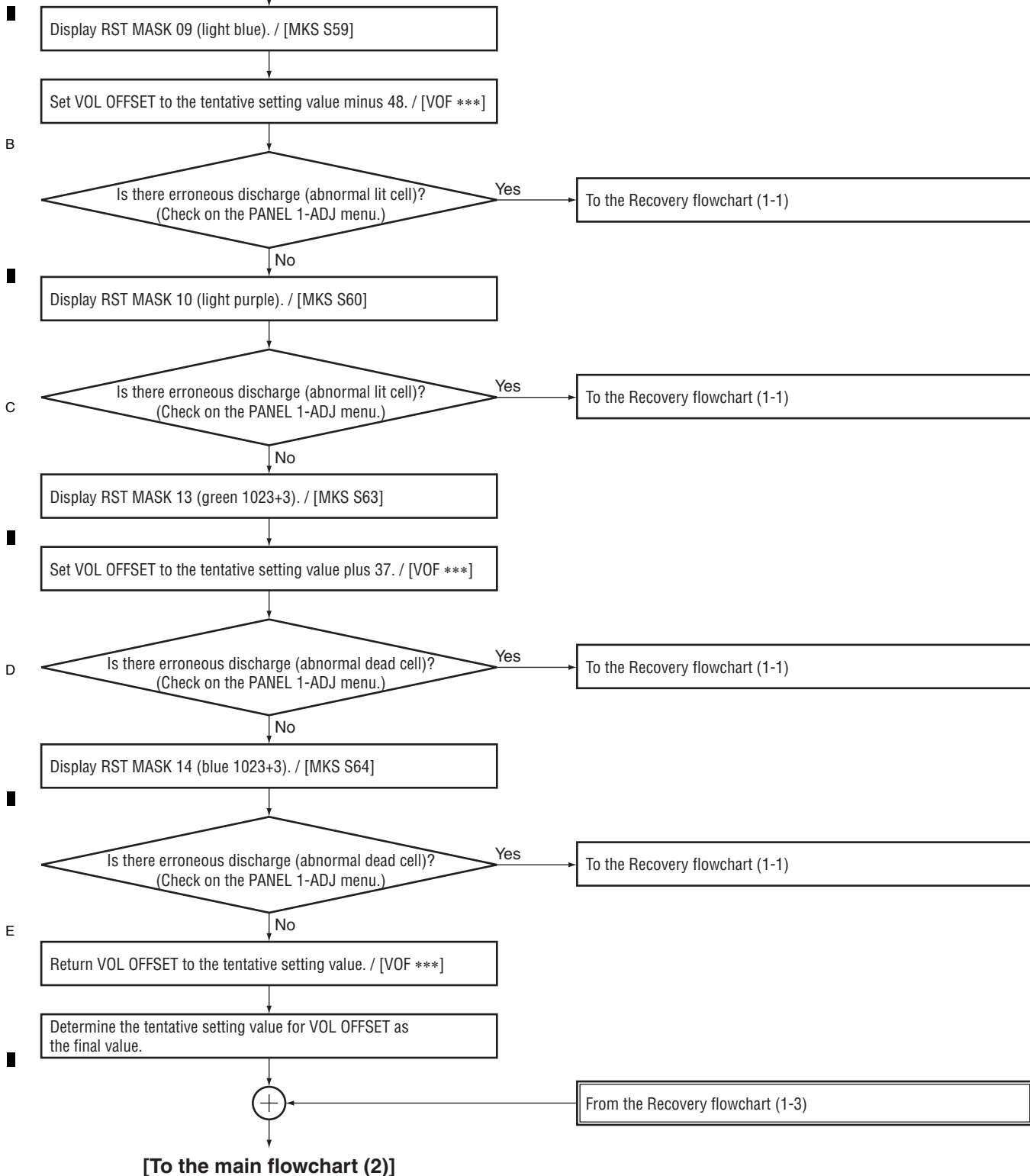
[PGB S00]: To set the gamma B value to that for Factory mode

[DIZ S03]: Dither ON, L dither ON, noise OFF

A

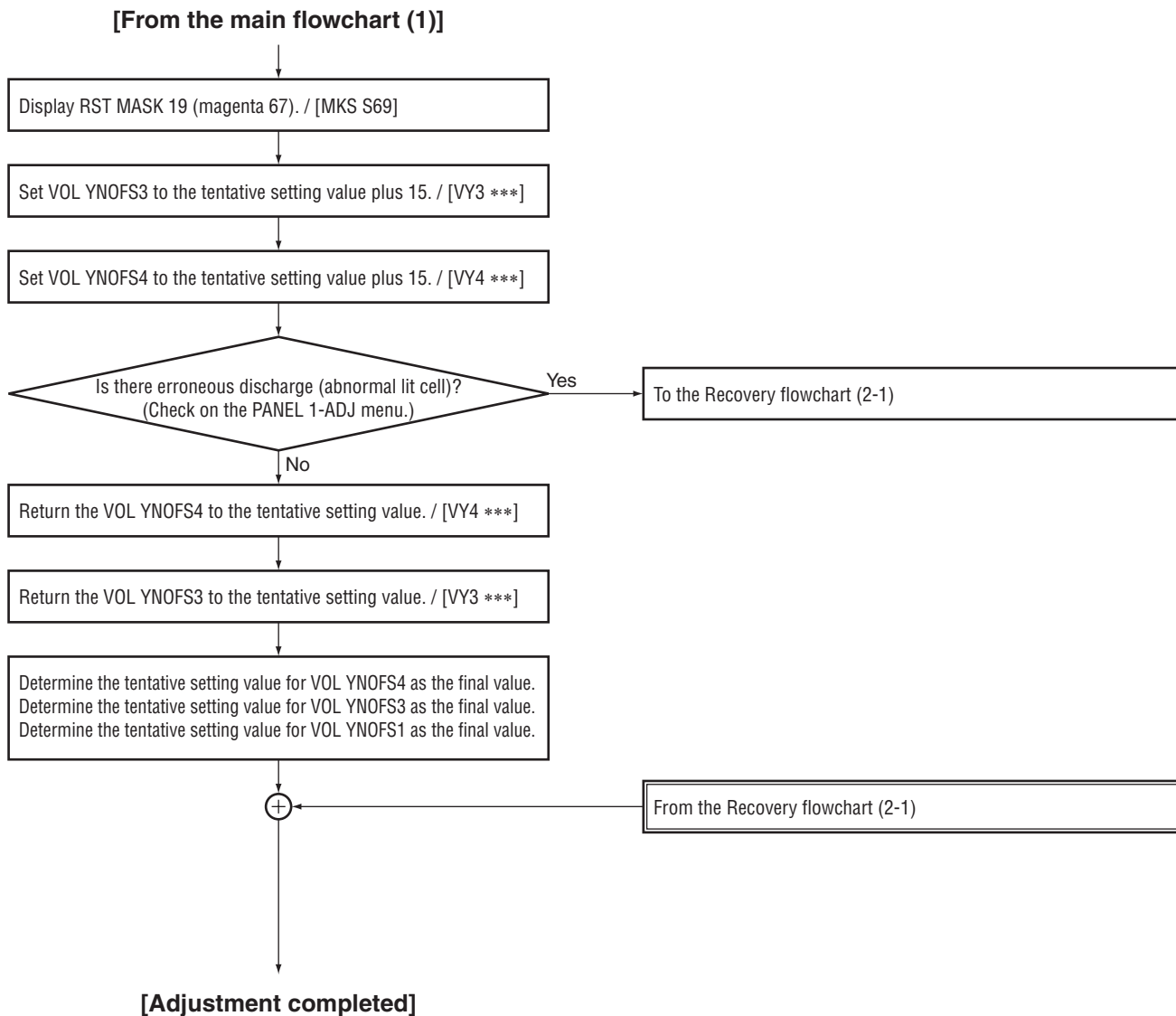
■ Main flowchart (1)...Checking VOL OFFSET

[From Preparation]



F

■ Main flowchart (2)...Checking VOL YNOFS3



Note: Make sure that the values for VOL SUS(*1), VOL OFFSET, VOL RST P(*1), VOL XPOFS1,2(*1) and VOL YNOFS1, 3, 4 are the final setting values.

*1: The tentative setting value becomes the final value.

Recovery flowchart (1-1)...Changing the Vol Offset setting voltage

Note: Disregard the discharge that may appear during voltage-change setting.

[From the main flowchart (1)]

Display RST MASK 09 (light blue). / [MKS S59]

* If RST MASK 09 (light blue) is already displayed, skip this step.

Set VOL OFFSET to the setting value 000. / [VOF 000]

Gradually increase the VOL OFFSET value until disappear the discharge (lit cell).
The VOL OFFSET value must be 245 or less.

* This setting becomes
VOL OFFSET_min1.

VOL OFFSET_min1

Note:

Make a note of this VOL OFFSET_min1 value.

VOL OFFSET_min1 $\leq$ 155?

No

**Replacement of abnormal circuits or
re-replacement of the panel required**

Yes

Display RST MASK 10 (light purple). / [MKS S60]

Set VOL OFFSET to the setting value 000. / [VOF 000]

Gradually increase the VOL OFFSET value until disappear the discharge (lit cell).
The VOL OFFSET value must be 245 or less.

* This setting becomes
VOL OFFSET_min2.

VOL OFFSET_min2

Note:

Make a note of this VOL OFFSET_min2 value.

VOL OFFSET_min2 $\leq$ 155?

No

**Replacement of abnormal circuits or
re-replacement of the panel required**

Yes

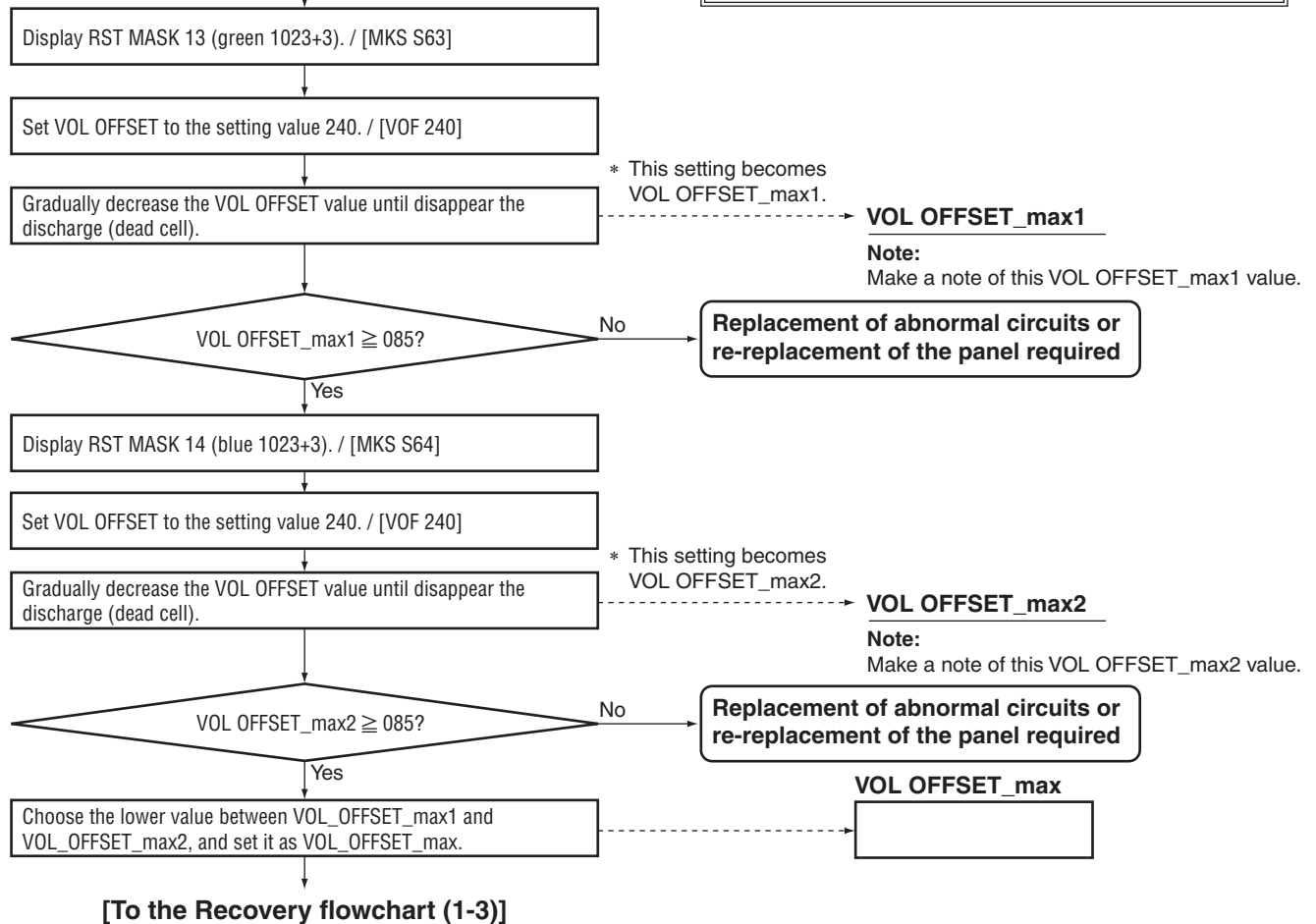
Choose the higher value between VOL_OFFSET_min1 and
VOL_OFFSET_min2, and set it as VOL_OFFSET_min.

VOL OFFSET_min

[To the Recovery flowchart (1-2)]

Recovery flowchart (1-2)

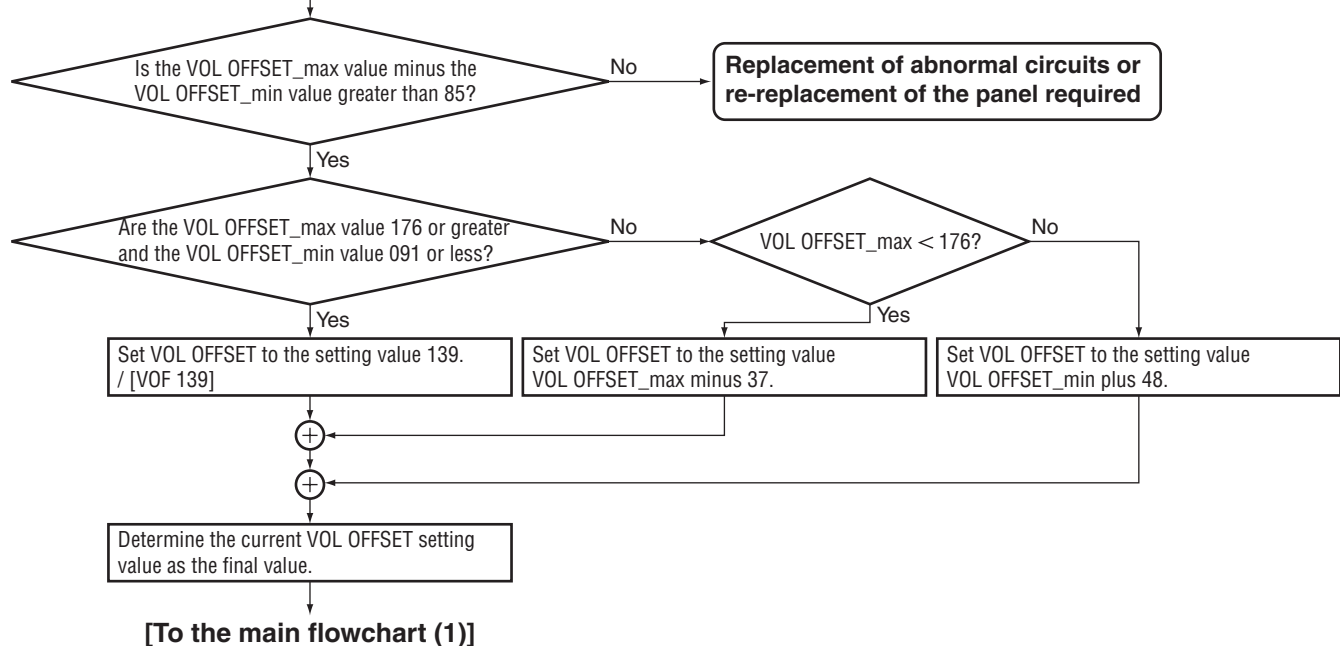
[From the Recovery flowchart (1-1)]



[To the Recovery flowchart (1-3)]

Recovery flowchart (1-3)

[From the Recovery flowchart (1-2)]



[To the main flowchart (1)]

A

Recovery flowchart (2-1)...Changing the VOL YNOFS3 setting voltage

Note: Disregard the discharge that may appear during voltage-change setting.

[From the main flowchart (2)]

B

Set VOL YNOFS1 to the tentative setting value plus 15. / [VY1 ***]



Set VOL YNOFS3 to the current setting value minus 2. / [VY3 ***]

Set VOL YNOFS4 to the current setting value minus 2. / [VY4 ***]

Set VOL YNOFS1 to the current setting value minus 2. / [VY1 ***]

C

Is the current VOL YNOFS3 setting value smaller than the tentative setting value?

Yes

Replacement of abnormal circuits or re-replacement of the panel required

No

Is there erroneous discharge (abnormal lit cell)?
(Check on the PANEL 1-ADJ menu.)

Yes

No

D

Set VOL YNOFS3 to the current setting value minus 15. / [VY3 ***]

Set VOL YNOFS4 to the current setting value minus 15. / [VY4 ***]

Set VOL YNOFS1 to the current setting value minus 15. / [VY1 ***]

E

Determine the current setting value for VOL YNOFS3 as the final value.
Determine the current setting value for VOL YNOFS4 as the final value.
Determine the current setting value for VOL YNOFS1 as the final value.

[To the main flowchart (2)]

F

Setting Voltages

VOF		VRP						VY1				VY3				VY4			
Vysnofs (V)	Value	Vyprst (V)	Value	Vyprst (V)	Value	Vyprst (V)	Value	Vyknofs1,2 (V)	Value	Vyknofs1,2 (V)	Value	Vyknofs3 (V)	Value	Vyknofs3 (V)	Value	Vyknofs4 (V)	Value	Vyknofs4 (V)	Value
14	000	130	001	190	109	250	217	151	001	211	129	151	001	211	129	151	001	211	129
15	005	131	003	191	111	251	219	152	003	212	131	152	003	212	131	152	003	212	131
16	011	132	004	192	113	252	221	153	005	213	133	153	005	213	133	153	005	213	133
17	016	133	006	193	114	253	223	154	008	214	136	154	008	214	136	154	008	214	136
18	021	134	008	194	116	254	224	155	010	215	138	155	010	215	138	155	010	215	138
19	027	135	010	195	118	255	226	156	012	216	140	156	012	216	140	156	012	216	140
20	032	136	012	196	120	256	228	157	014	217	142	157	014	217	142	157	014	217	142
21	037	137	013	197	122	257	230	158	016	218	144	158	016	218	144	158	016	218	144
22	043	138	015	198	123	258	232	159	018	219	146	159	018	219	146	159	018	219	146
23	048	139	017	199	125	259	233	160	020	220	148	160	020	220	148	160	020	220	148
24	053	140	019	200	127	260	235	161	022	221	150	161	022	221	150	161	022	221	150
25	059	141	021	201	129	261	237	162	025	222	153	162	025	222	153	162	025	222	153
26	064	142	022	202	131	262	239	163	027	223	155	163	027	223	155	163	027	223	155
27	069	143	024	203	133	263	241	164	029	224	157	164	029	224	157	164	029	224	157
28	075	144	026	204	134	264	242	165	031	225	159	165	031	225	159	165	031	225	159
29	080	145	028	205	136	265	244	166	033	226	161	166	033	226	161	166	033	226	161
30	085	146	030	206	138	266	246	167	035	227	163	167	035	227	163	167	035	227	163
31	091	147	031	207	140	267	248	168	037	228	165	168	037	228	165	168	037	228	165
32	096	148	033	208	142	268	250	169	040	229	168	169	040	229	168	169	040	229	168
33	101	149	035	209	143	269	251	170	042	230	170	170	042	230	170	170	042	230	170
34	107	150	037	210	145	270	253	171	044	231	172	171	044	231	172	171	044	231	172
35	112	151	039	211	147	271	255	172	046	232	174	172	046	232	174	172	046	232	174
36	117	152	041	212	149			173	048	233	176	173	048	233	176	173	048	233	176
37	123	153	042	213	150			174	050	234	178	174	050	234	178	174	050	234	178
38	128	154	044	214	152			175	052	235	180	175	052	235	180	175	052	235	180
39	133	155	046	215	154			176	054	236	182	176	054	236	182	176	054	236	182
40	139	156	048	216	156			177	057	237	185	177	057	237	185	177	057	237	185
41	144	157	050	217	158			178	059	238	187	178	059	238	187	178	059	238	187
42	149	158	051	218	159			179	061	239	189	179	061	239	189	179	061	239	189
43	155	159	053	219	161			180	063	240	191	180	063	240	191	180	063	240	191
44	160	160	055	220	163			181	065	241	193	181	065	241	193	181	065	241	193
45	165	161	057	221	165			182	067	242	195	182	067	242	195	182	067	242	195
46	171	162	059	222	167			183	069	243	197	183	069	243	197	183	069	243	197
47	176	163	060	223	169			184	072	244	200	184	072	244	200	184	072	244	200
48	181	164	062	224	170			185	074	245	202	185	074	245	202	185	074	245	202
49	187	165	064	225	172			186	076	246	204	186	076	246	204	186	076	246	204
50	192	166	066	226	174			187	078	247	206	187	078	247	206	187	078	247	206
51	197	167	068	227	176			188	080	248	208	188	080	248	208	188	080	248	208
52	203	168	069	228	178			189	082	249	210	189	082	249	210	189	082	249	210
53	208	169	071	229	179			190	084	250	212	190	084	250	212	190	084	250	212
54	213	170	073	230	181			191	086	251	214	191	086	251	214	191	086	251	214
55	219	171	075	231	183			192	089	252	217	192	089	252	217	192	089	252	217
56	224	172	076	232	185			193	091	253	219	193	091	253	219	193	091	253	219
57	229	173	078	233	187			194	093	254	221	194	093	254	221	194	093	254	221
58	235	174	080	234	188			195	095	255	223	195	095	255	223	195	095	255	223
59	240	175	082	235	190			196	097	256	225	196	097	256	225	196	097	256	225
60	245	176	084	236	192			197	099	257	227	197	099	257	227	197	099	257	227
61	251	177	086	237	194			198	101	258	229	198	101	258	229	198	101	258	229
		178	087	238	196			199	104	259	232	199	104	259	232	199	104	259	232
		179	089	239	197			200	106	260	234	200	106	260	234	200	106	260	234
		180	091	240	199			201	108	261	236	201	108	261	236	201	108	261	236
		181	093	241	201			202	110	262	238	202	110	262	238	202	110	262	238
		182	095	242	203			203	112	263	240	203	112	263	240	203	112	263	240
		183	096	243	205			204	114	264	242	204	114	264	242	204	114	264	242
		184	098	244	206			205	116	265	244	205	116	265	244	205	116	265	244
		185	100	245	208			206	118	266	246	206	118	266	246	206	118	266	246
		186	102	246	210			207	121	267	249	207	121	267	249	207	121	267	249
		187	104	247	212			208	123	268	251	208	123	268	251	208	123	268	251
		188	105	248	214			209	125	269	253	209	125	269	253	209	125	269	253
		189	107	249	215			210	127	270	255	210	127	270	255	210	127	270	255

1 2 3 4

8.5 ADJUSTMENT WHEN THE DRIVE ASSYS ARE REPLACED

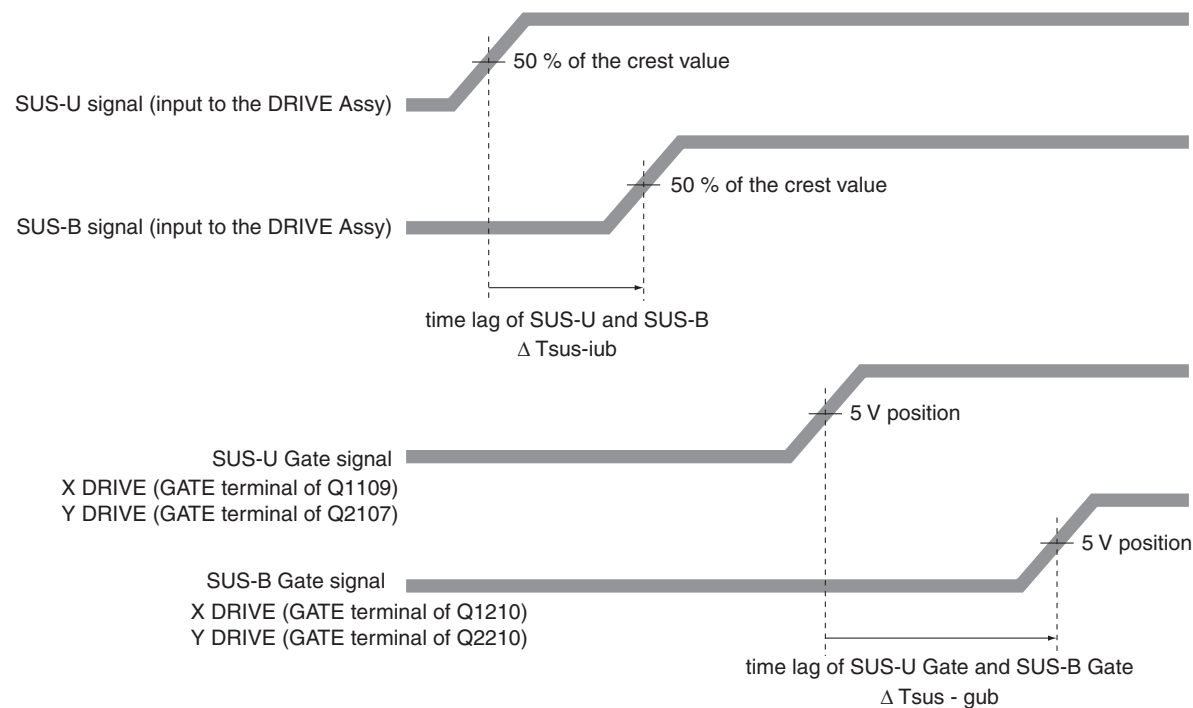
A ■ **Waveform adjustments required when replacing the following parts of the X DRIVE and Y DRIVE Assys.**

Assy Name	Ref No.	Part Name	Part Category	Remarks
X DRIVE Assy	IC1101	PS9117AP	Photo Coupler	
	IC1104	TND307TD	FET Driver	
	IC1204	PS9117AP	Photo Coupler	
	IC1209	TND307TD	FET Driver	
Y DRIVE Assy	IC2101	PS9117AP	Photo Coupler	
	IC2103	TND307TD	FET Driver	
	IC2201	PS9117AP	Photo Coupler	
	IC2203	TND307TD	FET Driver	

B

■ TIME LAG ADJUSTMENT OF THE CONTROL SIGNAL (SUS-B)

-
- ① Measure the time lag for the SUS-U signal to the SUS-B signal.
 - ② Check the time lag for the SUS-B GATE signal to the SUS-U GATE signal.
Adjust the variable control so that the time lag of GATE becomes "time lag of input signal + $\alpha \pm 5$ nsec."
- Note:** For details on measuring points of waveform, see the figure below.



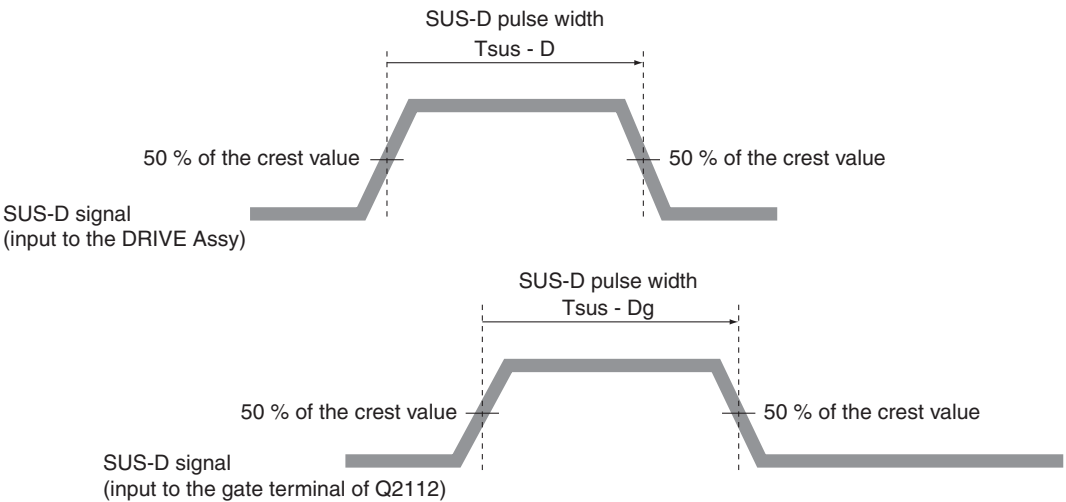
Time lag of SUS-U Gate and SUS-B Gate : $\Delta T_{sus-gub}$
Adjust so that " $\Delta T_{sus-gub} = \Delta T_{sus-iub} + \alpha \pm 5$ nsec," using the variable controls shown in the table below:

Assy	VR	Value of α
X DRIVE Assy	VR1002	70 nsec
Y DRIVE Assy	VR2002	50 nsec

■ DELAY ADJUSTMENT OF THE CONTROL SIGNAL (SUS-D)

- ① Measure the pulse width of the SUS-D signal.
- ② Check the pulse width of the SUS-D input signal (gate terminal of Q2112).
Adjust the variable control so that the pulse width of the SUS-D input signal (gate terminal of Q2112) becomes the same pulse width ± 5 nsec as the SUS-D signal.

Note: For details on measuring points of waveform, see the figure below.



SUS-D pulse width: Tsus - Dg

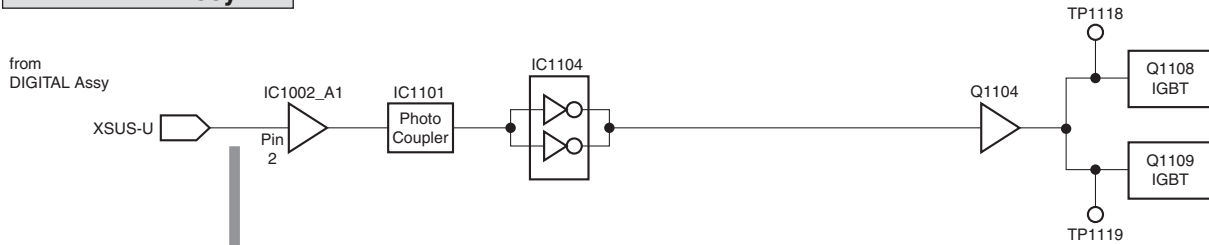
Adjust so that "Tsus - Dg = Tsus - D $\pm$ 5 nsec," using the variable control shown in the table below:

Assy	VR
Y DRIVE Assy	VR2001

A

SUS-B ADJUSTMENT

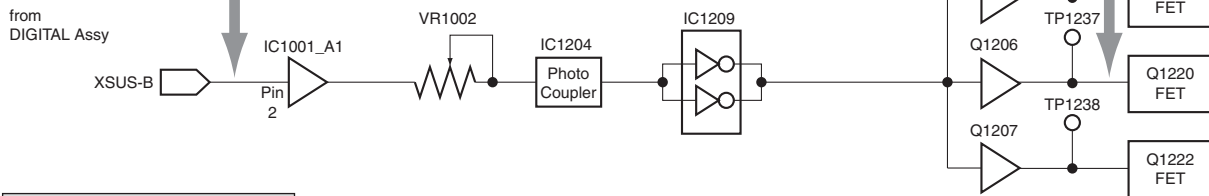
X DRIVE Assy



B

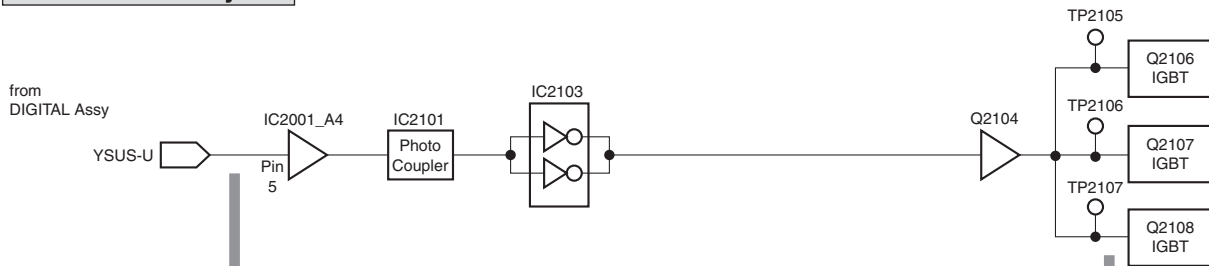
① Measure the SUS-U and SUS-B input delay time ($\Delta T_{sus} - i_{ub}$).

② Adjust the SUS-U and SUS-B input delay time so that it becomes " $\Delta T_{sus} - i_{ub} + 70 \pm 5 \text{ nsec.}$ "



C

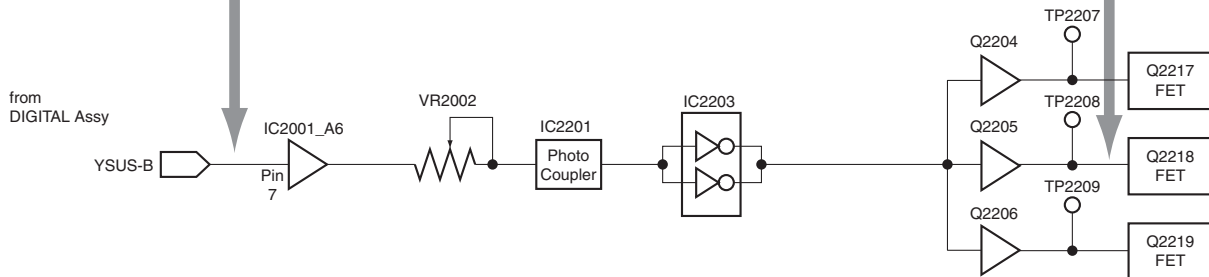
Y DRIVE Assy



D

① Measure the SUS-U and SUS-B input delay time ($\Delta T_{sus} - i_{ub}$).

② Adjust the SUS-U and SUS-B input delay time so that it becomes " $\Delta T_{sus} - i_{ub} + 50 \pm 5 \text{ nsec.}$ "



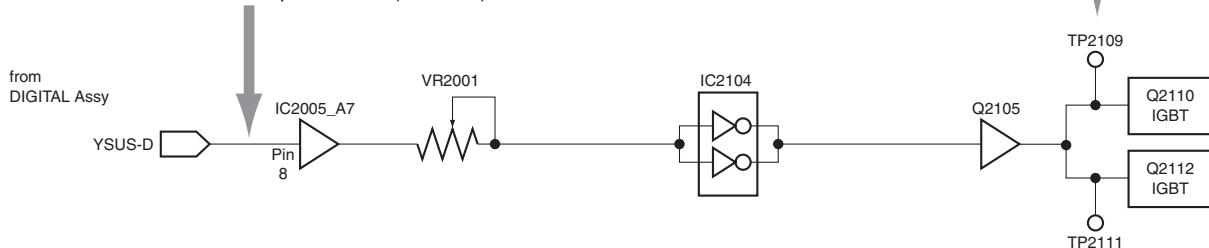
E

SUS-D ADJUSTMENT

Y DRIVE Assy

② Adjust the pulse width ($T_{sus} - D_g$) of the SUS-D input signal so that it becomes " $T_{sus-D} \pm 5 \text{ nsec.}$ "

① Measure the SUS-D pulse width ($T_{sus} - D$).



F

9. RS-232C

9.1 OUTLINE OF RS-232C COMMAND

9.1.1 PREPARED TOOLS

It is necessary to prepare the following one to use 232C command.

- PC
 - Application for control
 - 232C cable (straight)
- * The setting of the Com port cannot be communicated if it doesn't do correctly.
(Please follow a set explanation of PC in the Com port)

9.1.2 USING RS-232C COMMANDS

Individual ports are provided for RS-232C and SR+ connectors with this model. Therefore, unlike the case of previous models, which required switching of exclusive operation between these connectors on the Integrator menu, switching is no longer required.

9.2 LIST OF RS-232C COMMANDS

RS-232C commands can be used in Service Factory mode. Before using RS-232C commands, it is necessary to change the factory presetting. See "9.1 OUTLINE OF RS-232C COMMAND".

[Note ; If you want to see version information (ex. QS1, QSE, Factory, Menu), Please see 10 seconds after starting.]

RS-232C command list

Command Name	Function		Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
A							
ABL	***	Adjusting the upper limit of the power	●		Mod	●	
AMT	S00	Audio mute OFF		●			
	S01	Audio mute ON		●			
AP0	S**	ADDRESS L1, L2 setting	●		Mod	●	UP*/DN* is not effective
AP1	S**	ADDRESS L3, L4 setting	●		Mod	●	UP*/DN* is not effective
APN	***	1V average pulse number setting	●		Mod	●	UP*/DN* is not effective
APW	S00	APL interlocked function: OFF	●			●	
	S01	APL interlocked function: ON	●			●	
	S02	APL interlocked WB: ON / APL interlocked γ : OFF	●			●	
	S03	APL interlocked WB: OFF / APL interlocked γ : ON	●			●	
B							
BCP		Copying the backup data in the EEPROM	●			●	
BHI	***	User white balance : BLUE highlight	●				
BLW	***	User white balance : BLUE lowlight	●				
BRT	***	User brightness	●				
BSM	S00	After image/Burning safe mode: OFF	●				
	S01	After image/Burning safe mode: ON	●				
C							
CBU		Clearing backup data of EEPROM	●			●	
CHM		Clearing data of the hour meter	●			●	
CHN	FWD	Changing tuner preset channel (1 step forward)		●			
	REV	Changing tuner preset channel (1 step reverse)		●			
CNT	***	User contrast	●				
CMT		Clearing data of the maximum temperature	●			●	
CPC		Clearing power-on count data	●			●	
CPD		Clearing power-down history	●			●	
CPM		Clearing data of the pulse meter	●			●	
CSD		Clearing shutdown history	●			●	
D							
DIZ	S00	Dither/L dither OFF & noise OFF	●			●	
	S01	Dither/L dither ON & noise ON	●			●	
	S02	Dither/L dither OFF & noise ON	●			●	
	S03	Dither/L dither ON & noise OFF	●			●	
DRV	S00	Panel drive power OFF	●				
	S01	Panel drive power ON	●				
DW*		To subtract *** to the adjustment value (***) = 000 to 999, designated by a function command)		●			
F							
FAJ		Determining the flag of the DIGITAL Assy adjustment in "adjustment is completed"	●			●	
FAN		Factory mode off	●	●		●	
FAY		Factory mode on	●	●			
FST		Set each memory setting of MTB side to the shipment state.		●		●	

Command Name	Function		Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
G							
GHI	***	User white balance : GREEN highlight	●				
GLW	***	User white balance : GREEN low light	●				
I							
INA	***	Switching the terrestrial analog signal (***: channel number)		●	Main		
		Switching the terrestrial analog signal		●	Main		
INC	***	Switching the terrestrial digital signal (Step-upD and RegularD only) (***:channel number)		●	Main		
		Switching the terrestrial digital signal (Step-upD and RegularD only)		●	Main		
INH		Switching the HomeGallery		●			
INP	S01	Input switch: INPUT 1		●	Main		
	S02	Input switch: INPUT 2		●	Main		
	S03	Input switch: INPUT 3		●	Main		
	S04	Input switch: INPUT 4		●	Main		
	S05	Input switch: INPUT 5		●	Main		
	S06	Input switch: INPUT 6 (PC)		●	Main		
M							
MKC	S00	Panel mask indication off	●		Mod		
	S01	H ramp (slant 1) M	●		Mod	●	
	S02	H ramp (slant 4) M	●		Mod	●	
	S03	Slanting ramp M	●		Mod	●	
	S04	30 for aging	●		Mod	●	
	S05	05 for aging	●		Mod	●	
	S06	Erasing afterimage 1	●		Mod	●	
	S07	Erasing afterimage 2 (RGB: zigzag, V: reverse)	●		Mod	●	
	S08	White (change in luminance level)	●		Mod	●	
	S09	PEAK SEEK RASTER	●		Mod	●	
	S10	For engineering use	●		Mod	●	
	S11	Green vertical line scroll	●		Mod	●	
	S12	Green horizontal line scroll	●		Mod	●	
	S13	Vertical ramp vertical scroll (white)	●		Mod	●	
	S14	Vertical ramp vertical scroll (green)	●		Mod	●	
	S15	Horizontal ramp horizontal scroll (white)	●		Mod	●	
	S16	Horizontal ramp horizontal scroll (green)	●		Mod	●	
S17	Cross hatch + window	●		Mod	●		
MKS	S00	MASK off	●		Mod		
	S01	H ramp (slant 1)	●		Mod	●	
	S02	H ramp (slant 4)	●		Mod	●	
	S03	V ramp (slant 1)	●		Mod	●	
	S04	Slanting ramp	●		Mod	●	
	S05	Window (Hi= 870, Lo= 102)	●		Mod	●	

A

B

C

D

E

F

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
M							
MKS	S06	Window (Hi= 1023, Lo= 102)	●		Mod	●	
	S07	Window (Hi= 1023, Lo=000)	●		Mod	●	
	S08	Window (Hi= 1023) 4 %	●		Mod	●	
	S09	Window (Hi= 1023) 1.25 %	●		Mod	●	
	S10	Window (1/7 LINE)	●		Mod	●	
	S11	STRIPE (MGT/GRN)	●		Mod	●	
	S12	STRIPE (GRN/MGT)	●		Mod	●	
	S13	B & W, checker (1 line)	●		Mod	●	
	S14	B & W, checker (2 lines)	●		Mod	●	
	S15	B & W, checker (4 lines)	●		Mod	●	
	S16	B & W, checker (8 lines)	●		Mod	●	
	S17	COLOR BAR	●		Mod	●	
	S18	Slanting lines	●		Mod	●	
	S19	Red & black, checker (1 line)	●		Mod	●	
	S20	Red & black, checker (2 lines)	●		Mod	●	
	S21	Red & black, checker (4 lines)	●		Mod	●	
	S22	Red & black, checker (8 lines)	●		Mod	●	
	S23	Erasing afterimage (RGB: zigzag, V: reverse)	●		Mod	●	
	S24	SUS 2000 pulses (black raster)	●		Mod	●	
	S25	1 for perfect linear	●		Mod	●	
	S26	2 for perfect linear	●		Mod	●	
	S27	3 for perfect linear	●		Mod	●	
	S28	4 for perfect linear	●		Mod	●	
	S29	RGB checker 1	●		Mod	●	
	S30	RGB checker 2	●		Mod	●	
	S31	Window RED (RED=1023)	●		Mod	●	
	S32	Window GREEN (GREEN=1023)	●		Mod	●	
	S33	Window BLUE (BLUE=1023)	●		Mod	●	
	S34	Even line horizontal stripes	●		Mod	●	
	S35	Odd line horizontal stripes	●		Mod	●	
	S36	Afterimage check 1	●		Mod	●	
	S37	Afterimage check 2	●		Mod	●	
	S38	Afterimage check 3	●		Mod	●	
	S39	Afterimage check 4	●		Mod	●	
	S40	Red single-color slanting ramp	●		Mod	●	
	S41	GREEN single-color slanting ramp	●		Mod	●	
	S42	BLUE single-color slanting ramp	●		Mod	●	
	S43	Black back acnode	●		Mod	●	
	S44	Horizontal stripes every eight white lines	●		Mod	●	
	S45	5 for perfect linear	●		Mod	●	
	S46	6 for perfect linear	●		Mod	●	
	S47	7 for perfect linear	●		Mod	●	
	S48	8 for perfect linear	●		Mod	●	
	S49	Mask for ABL adjustment	●		Mod	●	
	S51	Raster - White	●		Mod	●	
	S52	Raster - Red	●		Mod	●	
	S53	Raster - Green	●		Mod	●	
	S54	Raster - Blue	●		Mod	●	
	S55	Raster - Black	●		Mod	●	

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
MKS	S56	Raster - Cyan	●		Mod	●	
	S57	Raster - Magenta	●		Mod	●	
	S58	Raster - Yellow	●		Mod	●	
	S59	Raster - Light blue	●		Mod	●	
	S60	Raster - Pale purple	●		Mod	●	
	S61	Raster - Pale purple 2	●		Mod	●	
	S62	Raster - Red 1023+3	●		Mod	●	
	S63	Raster - Green 1023+3	●		Mod	●	
	S64	Raster - Blue 1023+3	●		Mod	●	
	S65	Raster - Red 179	●		Mod	●	
	S66	Raster - Green 179	●		Mod	●	
	S67	Raster - Blue 179	●		Mod	●	
	S68	Raster - Cyan 67	●		Mod	●	
	S69	Raster - Magenta 67	●		Mod	●	
	S70	Raster - Green 137	●		Mod	●	
	S71	Raster - Beige	●		Mod	●	
	S72	Raster - Blue 1023+	●		Mod	●	
	S73	Raster - Red 635	●		Mod	●	
	S74	Raster - Blue 635	●		Mod	●	
	S75	Raster - Gray 307	●		Mod	●	
MST	S00	Display one screen		●			
	S01	PsideP (Main size: normal)		●			
	S02	PinP (Right down)		●			
	S03	PinP (Right up)		●			
	S04	PinP (Left up)		●			
	S05	PinP (Left down)		●			
	S08	SWAP (Exchanging sub-screen)		●			
N							
NGP	S00	Negative positive inversion: OFF	●			●	
	S01	Negative positive inversion: ON	●			●	
O							
OSD	S00	Turning OSD setting to off		●	Main		
	S01	Turning OSD setting to on		●	Main		
P							
PAV	S**	Switching panel functions interlocked with the AV selection	●				
PBH	***	Panel white balance adjustment - Blue highlight	●		Mod	●	
PBL	***	Panel white balance adjustment - Blue low light	●		Mod	●	
PDM	S00	Passing PD signals to the POWER SUPPLY Unit => Power-down	●				
	S01	Not passing PD signals to the POWER SUPPLY Unit => No power-down	●				
PFL	S00	Peripheral luminance correction: OFF	●			●	
	S01	Peripheral luminance correction: ON fixed	●			●	
	S02	Peripheral luminance correction: APL interlocked ON	●			●	
PES	S00	Set the power consumption setting of the panel side to OFF	●				
	S01	Set the power consumption setting of the panel side to Energy saving 1	●				
	S02	Set the power consumption setting of the panel side to Energy saving 2	●				
PFN		Factory mode: off	●			●	
PFS		Setup at shipment	●			●	
PFY		Factory mode: on	●			●	
PGB	S**	Independent gamma Blue	●				
PGG	S**	Independent gamma Green	●				

A

Command Name		Function		Active U-com		Last Memory	Effective only in Factory mode	Remarks
				MDU	MTB			
P								
PGR	S**	Independent gamma Red		●				
PGH	***	Panel white balance adjustment - Green highlight		●		Mod	●	
PGL	***	Panel white balance adjustment - Green low light		●		Mod	●	
PMT	S00	Canceling panel muting		●				
	S01	Panel muting		●				
PKD	S00	Peak luminance detection: OFF		●			●	
	S01	Peak luminance detection: ON		●			●	
PKL	S**	Panel brightness setting		●				
POF		Power OFF		●	●	Main		
PON		Power on		●	●	Main		
PPT	S00	Panel protection: off		●			●	
	S01	Panel protection: on		●			●	
PRH	***	Panel white balance adjustment - Red highlight		●		Mod	●	
PRL	***	Panel white balance adjustment - Red low light		●		Mod	●	
PUC	S00	Pure cinema: off			●	Main	●	
	S01	Pure cinema: Standard			●	Main	●	
	S02	Pure cinema: Advance			●	Main	●	
	S03	Pure cinema: Smooth			●	Main	●	
Q								
QAJ		Acquiring various adjustment values		●				
QMT		Acquiring temperature of MTB side and Fan speed			●			
QNG		Acquiring shutdown information of MTB side			●			
QPD		Acquiring logs of power-down points		●				
QPM		Acquiring data of the pulse meter		●				
QPW		Acquiring panel white balance adjustment values		●				
QS1		Acquiring unit data, such as the software version common to all models, regardless of destination		●	●			
QS2		Acquiring data on the status of the unit, such as temperature		●				
QS3		Each information output for panel		●				
QSE		Acquiring unit data, such as the software version common to all models, regardless of destination			●			
QSD		Acquiring data on shutdown		●				
QSI		Acquiring data related with signals		●				
QSP		Acquiring the software sub-version of the microcomputer at panel side		●				
R								
RBL	S**	Setting of blue level for panel degradation correction		●		Mod	●	
RGL	S**	Setting of green level for panel degradation correction		●		Mod	●	
RHI	***	User white balance - Red highlight		●				
RLS	S**	Room light sensor operation at panel side		●				
RLW	***	User white balance - Red low light		●				
RRL	S**	Setting of red level for panel degradation correction		●		Mod	●	
R1K	***	RESET1ST_KSB adjustment		●		Mod	●	UP*/DN* is not effective
R2K	***	RESET2ND_KSB adjustment		●		Mod	●	UP*/DN* is not effective

F

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
S							
SDM	S00	Shutdown enabled	●				
	S01	Shutdown prohibited	●				
SFR	S01	Measures against AM radio noise - Pattern 1	●		Mod	●	
	S02	Measures against AM radio noise - Pattern 2	●		Mod	●	
	S03	Measures against AM radio noise - Pattern 3	●		Mod	●	
	S04	Measures against AM radio noise - Pattern 4	●		Mod	●	
	S05	Measures against AM radio noise - Pattern 5	●		Mod	●	
	S06	Measures against AM radio noise - Pattern 6	●		Mod	●	
	S07	Measures against AM radio noise - Pattern 7	●		Mod	●	
	S08	Measures against AM radio noise - Pattern 8	●		Mod	●	
SKM	S00	STREAKING correction OFF	●		Mod	●	
	S01	STREAKING correction mode 1	●		Mod	●	
	S02	STREAKING correction mode 2	●		Mod	●	
	S03	STREAKING correction mode 3	●		Mod	●	
	S04	STREAKING correction mode 4	●		Mod	●	
	S05	STREAKING correction mode 5	●		Mod	●	
	S06	STREAKING correction mode 6	●		Mod	●	
	S07	STREAKING correction mode 7	●		Mod	●	
SMC	S01	Smooth clear drive OFF	●			●	
	S02	Smooth clear drive ON	●			●	
SML	***	Adjustment of the side mask level		●	Main	●	
SMM	S**	Setting of the effective area during streaking correction	●			●	
SN0	***	Setting of the serial No. 0 (panel)	●		Mod	●	
SN1	***	Setting of the serial No. 1 (panel)	●		Mod	●	
SN2	***	Setting of the serial No. 2 (panel)	●		Mod	●	
SN3	***	Setting of the serial No. 3 (panel)	●		Mod	●	
SN4	***	Setting of the serial No. 4 (panel)	●		Mod	●	
SQM	S01	VIDEO sequence setting	●				
	S02	PC sequence setting	●				
SSM	S01	SSCG OFF	●			●	
	S02	SSCG ON	●			●	
SZM	S00	Setting the screen size to Dot by Dot		●	Main		
	S01	Setting the screen size to 4 :3		●	Main		
	S02	Setting the screen size to FULL		●	Main		
	S03	Setting the screen size to ZOOM		●	Main		
	S04	Setting the screen size to CINEMA		●	Main		
	S05	Setting the screen size to WIDE		●	Main		
	S06	Setting the screen size to FULL 14 : 9		●	Main		
	S07	Setting the screen size to CINEMA 14 : 9		●	Main		
T							
THS	S00	Theater port interlock operation OFF	●				
	S01	Theater port interlock operation ON	●				
U							
UAJ		Determining the flag for the DIGITAL Assy adjustment in "not adjusted"	●				
UP*		To add *** to the adjustment value (*** = 000 to 999, designated by a function command)		●			

A

B

C

D

E

F

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
V							
VFQ	S01	Setting the frequency in Mask mode to VD-48 Hz	●		Mod	●	
	S02	Setting the frequency in Mask mode to VD-50 Hz	●		Mod	●	
	S03	Setting the frequency in Mask mode to VD-60 Hz	●		Mod	●	
	S05	Setting the frequency in Mask mode to VD-72 Hz	●		Mod	●	
	S06	Setting the frequency in Mask mode to VD-75 Hz	●		Mod	●	
	S13	Setting the frequency in Mask mode to PC-60 Hz	●		Mod	●	
	S22	Setting the frequency in Mask mode to VD-50 Hz (nonstandard)	●		Mod	●	
	S23	Setting the frequency in Mask mode to VD-60 Hz (nonstandard)	●		Mod	●	
	S25	Setting the frequency in Mask mode to VD-72 Hz (nonstandard)	●		Mod	●	
	S26	Setting the frequency in Mask mode to VD-75 Hz (nonstandard)	●		Mod	●	
VOF	***	Adjustment of the reference value of Vofs voltage	●			●	
VOL	UP*, DW*, ***	To adjust the volume (to be used in combination with UP*/DW*)		●			
VRP	***	Adjustment of the reference value of Vrst-p voltage	●			●	
VSU	***	Adjustment of the reference value of Vsus voltage	●			●	
VX1	***	Adjustment of the reference value of Vxpofs1 voltage	●		Mod	●	UP*/DN* is not effective
VX2	***	Adjustment of the reference value of Vxpofs2 voltage	●		Mod	●	UP*/DN* is not effective
VY1	***	Adjustment of the reference value of Vyknofs1, 2 voltage	●		Mod	●	UP*/DN* is not effective
VY3	***	Adjustment of the reference value of Vyknofs3 voltage	●		Mod	●	UP*/DN* is not effective
VY4	***	Adjustment of the reference value of Vyknofs4 voltage	●		Mod	●	UP*/DN* is not effective
W							
WBI	S00	Panel WB standard output mode: off	●			●	
	S01	Panel WB standard output mode: on	●			●	
X							
X1B	***	XSUS_1ST_B adjustment	●		Mod	●	UP*/DN* is not effective
X3B	***	XSUS_3RD_B adjustment	●		Mod	●	UP*/DN* is not effective
XSB	***	XSUS_B adjustment	●		Mod	●	UP*/DN* is not effective
Y							
Y1K	***	YSTL_1SF_KSB adjustment	●		Mod	●	UP*/DN* is not effective
Y1Z	***	YSTL_1SF_HZ adjustment	●		Mod	●	UP*/DN* is not effective
Y2B	***	YSUS_2ND_B adjustment	●		Mod	●	UP*/DN* is not effective
Y2K	***	YSTL_2SF_KSB adjustment	●		Mod	●	UP*/DN* is not effective
Y2Z	***	YSTL_2SF_HZ adjustment	●		Mod	●	UP*/DN* is not effective
YNK	***	YSTL_FMR_KSB adjustment	●		Mod	●	UP*/DN* is not effective
YNZ	***	YSTL_FMR_HZ adjustment	●		Mod	●	UP*/DN* is not effective
YTK	***	YSTL_KSB adjustment	●		Mod	●	UP*/DN* is not effective
YTZ	***	YSTL_HZ adjustment	●		Mod	●	UP*/DN* is not effective
YSB	***	Y-SUS-B adjustment	●		Mod	●	UP*/DN* is not effective
Z							
ZME		Initializing the video EEPROM data		●		●	
ZPR		Initializing the setting data to which no adjustment command is provided	●			●	

9.3 DETAILS OF EACH COMMANDS

9.3.1 QS1 (PANEL STATUS)

Model information and version information are returned.

Command Format	Effective Operation Modes	Function	Remarks
[QS1]	Every Time	Output of status	Return data: 3 (ECO) + 84 (DATA) + 2 (CS) = 89 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QS1 (Fixed)
1	Resolution/size	1 byte	6
2	Panel Generation	1 byte	8
3	Destination	1 byte	*
4	Grade	1 byte	*
5	Panel Product Form	1 byte	B
6	Boot version of Module microcomputer	3 byte	05H
7	Program version of Module microcomputer	8 byte	– 01A
8	Boot version of Sequence processor	3 byte	07X
9	Program version of Sequence processor	8 byte	– 01W
10	Panel information	8 byte	G8_50X_4
11	Reserved (*)	8 byte	*****
12	, (comma)	1 byte	
13	MTB information 1 (Generation)	1 byte	8
14	MTB information 2 (Regional model)	1 byte	E
15	MTB information 3 (Grade)	1 byte	R
16	MTB information 4 (System Type)	1 byte	B
17	Common version for IF microcomputer	8 byte	– 06A
18	Boot version of IF microcomputer	4 byte	01A
19	Common version for Main microcomputer	8 byte	– 27E
20	Boot version of Main microcomputer	4 byte	– 03E
21	Common version for Multi-processor	8 byte	– 09H
22	Boot version of Multi-processor	4 byte	09A
23	Check Sum	2 byte	FF

13: MTB/MB Generation	
6	G6
7	G7
8	G8
9	G9
0	G10

14: Regional Model	
J	JP
A	US
E	EU
G	GE
C	CH
U	AU

15: MTB/MB Grade	
H	Elite/XDA/Step-upD
T	Step-upA/XG/XC/Regular (US)
B	Not used (For Future)
S	RegularD
R	RegularA

16: MTB/MB Product Form	
S	System model
B	One body model (SX)

1: Resolution/Inch Size	
3	1024*768-42
4	1024*768-43
5	1280*768-50
6	1365*768-50
7	1365*768-60
E	1920*1080-42
F	1920*1080-50
G	1920*1080-60

2: Panel Generation	
6	G6
7	G7
8	G8
9	G9
0	G10

3: Destination	
*	Commonness
A	US (Reserved)
E	EU (Reserved)
J	Japan (Reserved)

4: Grade	
*	Commonness
Z	Evaluation

5: Panel Product Form	
S	System model
B	All-in-one design TV
M	Monitor
D	Standard module
E	Simple module

10: Panel Information		
1 to 3rd byte	G8_	Generation information (+ under bar)
4 to 5th byte	42	42 inch
	50	50 inch
	60	60 inch
	**	PSIZE information and SQ_LSI version mismatching (version mismatching at SD)
6th byte	F	FHD
	X	XGA
	*	Model information and SQ_LSI version mismatching (version mismatching at SD)
7th byte	–	Under bar
8th byte	*	PLANT information and SQ_LSI version mismatching (version mismatching at SD)
	‘	Others

9.3.2 QS2 (PANEL OPERATION DATA)

The command QS2 is for acquiring data on the panel's operational information.

Command Format	Effective Operation Modes	Function	Remarks
[QS2]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO) + 34 (DATA) + 2 (CS) = 39 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QS2
1	Notification of mode shifting to STB	1 byte	1
2	Flag for adjustment of the main unit	1 byte	0
3	Flag for adjustment-data backup	1 byte	0
4	"1st PD" data	1 byte	0
5	"2nd PD" data	1 byte	0
6	Reserved	3 byte	***
7	Temperature data (TEMP 1)	3 byte	128
8	SD main data	1 byte	0
9	SD sub data	1 byte	0
10	Operation status induced by SD	1 byte	0
11	Reserved	3 byte	***
12	HOUR METER	8 byte	00000259
13	MASK indication	1 byte	0
14	Still picture detection	1 byte	0
15	SCAN protection detection	1 byte	0
16	Panel crack detection	1 byte	0
17	Address emergency detection	1 byte	0
18	Reserved	4 byte	****
CS		2 byte	4A

8: SD main data	
0	No SD
1	SQ_LSI
2	MDU-IIC
3	RST2
4	TEMP

9-1: SD-Sub (SQ_LSI)	
0	No SD-Sub data
1	Communication error
2	Drive stop
3	BUSY
4	Version mismatching (H/S)
5	Version mismatching (M/S)

9-2: SD-Sub (IIC)	
0	No SD-Sub data
1	EEPROM
2	BACKUP
3	DAC1
4	DAC2

9-3: SD-Sub (TEMP)	
0	No SD-Sub data
1	TEMP1 high temperature
2	TEMP1 low temperature

10: Operation status induced by SD	
0	Normal
1	Relay-off completed
2	During warning indication

13: MASK indication	
0	MASK-OFF
1	MASK-ON

14 to 17: Detection of panel protection function	
0	Normal
1	At detection

1: Notification of mode shifting to Standby	
P	During power ON
0	Entering Standby mode failed
1	Entering Standby mode succeeded

2: Adjustment of the main unit	
0	Adjustment completed
1	Adjustment not completed

3: Adjustment-data backup	
0	With backup data
1	No data (default)

4, 5: PD data	
0	No PD data
1	Not used
2	POWER
3	SCAN
4	SCN-5V
5	Y-DRV
6	Y-DCDC
7	Y-SUS
8	ADRS
9	X-DRV
A	X-DCDC
B	X-SUS
C	DIG-DCDC
D	Not used
E	Not used
F	UNKNOWN

9.3.3 QS3 (OTHER DATA ON THE PANEL)

The command QS3 is for acquiring data on operational information of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QS3]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO) + 58 (DATA) + 2 (CS) = 63 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QS3
1	SERIAL	15 byte	-----
2	HOUR METER	8 byte	00000000
3	TOTAL HR METER	8 byte	00000000
4	PON COUNTER	8 byte	00000000
5	TEMP1 acquisition (Temperature value)	5 byte	+23.5 (*1)
6	TEMP0 acquisition (Temperature value)	5 byte	+28.7 (*1)
7	MAX-TEMP1 acquisition (Temperature value)	5 byte	+78.3 (*1)
8	Reserved	4 byte	****
CS		2 byte	94

Note
(*1) : Centigrade scale

9.3.4 QAJ (PANEL ADJUSTMENT DATA)

The command QAJ is for acquiring the panel's factory-preset data.

Command Format	Effective Operation Modes	Function	Remarks
[QAJ]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO) + 84 (DATA) + 2 (CS) = 89 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QAJ
1	V-SUS adjustment value	3 byte	128
2	Vysnofs adjustment value	3 byte	128
3	Vyprst adjustment value	3 byte	128
4	Vxpofs1 adjustment value	3 byte	128
5	Vxpofs2 adjustment value	3 byte	128
6	Vyknofs1,2 adjustment value	3 byte	128
7	Vyknofs3 adjustment value	3 byte	128
8	Vyknofs4 adjustment value	3 byte	128
9	R1K adjustment value	3 byte	128
10	R2K adjustment value	3 byte	128
11	Y1K adjustment value	3 byte	128
12	Y1Z adjustment value	3 byte	128
13	X1B adjustment value	3 byte	128
14	Y2B adjustment value	3 byte	128
15	X3B adjustment value	3 byte	128
16	YSB adjustment value	3 byte	128
17	XSB adjustment value	3 byte	128
18	YTK adjustment value	3 byte	128
19	YTZ adjustment value	3 byte	128
20	Y2K adjustment value	3 byte	128
21	Y2Z adjustment value	3 byte	128
22	YNK adjustment value	3 byte	128
23	YNZ adjustment value	3 byte	128
24	R-REVISE setting value	1 byte	0
25	G-REVISE setting value	1 byte	0
26	B-REVISE setting value	1 byte	0
27	ADDRESS 1, 2 setting value	2 byte	01
28	ADDRESS 3, 4 setting value	2 byte	13
29	ADDRESS 5, 6 setting value	2 byte	32
30	ADDRESS 7, 8 setting value	2 byte	30
31	Streaking correction	1 byte	1
32	AM radio countermeasure	1 byte	1
33	Reserved	2 byte	**
CS		2 byte	B7

31: Streaking correction	
0	OFF
n	n: 1 to 8 (Mode n)

32: AM radio countermeasure	
n	n: 1 to 8 (SUS frequency n)

9.3.5 QPW (VIDEO ADJUSTMENT DATA OF THE PANEL)

The command QPW is for acquiring the factory-preset data about the video of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QPW]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO) + 40 (DATA) + 2 (CS) = 45 Byte

Data Arrangement	Data Length	Output Example	1: Drive sequence	3: Type of ABL/WB tables
ECO	3 byte	QPW	50V Video 50 Hz	Tn n: 1 to 4
1 Drive sequence	3 byte	60V	60V Video 60 Hz	11, 12, 13: RGB Gamma setting
2 Standard/nonstandard	1 byte	S	72V Video 72 Hz	n 00 to 31
3 Type of ABL/WB tables	2 byte	T2	75V Video 75 Hz	15: Center luminance correction
4 ABL adjustment value	3 byte	128	60P PC 60 Hz	0 OFF
5 R-HIGH adjustment value	3 byte	256	2: Standard/nonstandard	1 ON
6 G-HIGH adjustment value	3 byte	256	S Standard	2 ON (interlocked with APL)
7 B-HIGH adjustment value	3 byte	256	N Nonstandard	17: WB interlocked with APL
8 R-LOW adjustment value	3 byte	512		0 OFF
9 G-LOW adjustment value	3 byte	512		1 ON
10 B-LOW adjustment value	3 byte	512		2 WB interlocked ON/γ OFF
11 R gamma setting	2 byte	31		3 WB interlocked OFF/γ ON
12 G gamma setting	2 byte	10		18: Transition of brightness by protective operations
13 B gamma setting	2 byte	10		0 Upper limit state for brightness
14 Streaking correction	1 byte	1		1 Brightness being reduced
15 Center luminance correction	1 byte	0		2 Lower limit state for brightness
16 Reserved	1 byte	*		3 Brightness being increased
17 WB interlocked with APL	1 byte	0		
18 Transition of protective operations	1 byte	0		
19 Reserved	2 byte	**		
CS	2 byte	37		

9.3.6 QPM (PULSE METER VALUE)

The command QPM is for acquiring the accumulated number of pulses of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QPM]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO) + 40 (DATA) + 2 (CS) = 45 Byte

Data Arrangement	Data Length	Output Example
ECO	3 byte	QPM
1 Pulse meter B 1	8 byte	00000000
2 Pulse meter B 2	8 byte	00000000
3 Pulse meter B 3	8 byte	00000000
4 Pulse meter B 4	8 byte	00000000
5 Pulse meter B 5	8 byte	00000000
CS	2 byte	E7

9.3.7 QPD (PD LOGS)

The command QPD is for acquiring data from the 8 latest power-down (PD) logs.

Command Format	Effective Operation Modes	Function	Remarks
[QPD]	All operations	To acquire data on the power-down logs	Return data: 3 (ECO) + 80 (DATA) + 2 (CS) = 85 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QPD
1	Latest "1st PD" data	1 byte	A
2	Latest "2nd PD" data	1 byte	2
3	Data from the hour meter for the latest PD	8 byte	00010020
4	Second latest "1st PD" data	1 byte	E
5	Second latest "2nd PD" data	1 byte	9
6	Data from the hour meter for the second latest PD	8 byte	00008523
7	Third latest "1st PD" data	1 byte	4
8	Third latest "2nd PD" data	1 byte	3
9	Data from the hour meter for the third latest PD	8 byte	00004335
10	Fourth latest "1st PD" data	1 byte	2
11	Fourth latest "2nd PD" data	1 byte	0
12	Data from the hour meter for the fourth latest PD	8 byte	00000945
13	Fifth latest "1st PD" data	1 byte	4
14	Fifth latest "2nd PD" data	1 byte	0
15	Data from the hour meter for the fifth latest PD	8 byte	00000715
16	Sixth latest "1st PD" data	1 byte	A
17	Sixth latest "2nd PD" data	1 byte	2
18	Data from the hour meter for the sixth latest PD	8 byte	00000552
19	Seventh latest "1st PD" data	1 byte	A
20	Seventh latest "2nd PD" data	1 byte	0
21	Data from the hour meter for the seventh latest PD	8 byte	00000213
22	Eighth latest "1st PD" data	1 byte	D
23	Eighth latest "2nd PD" data	1 byte	0
24	Data from the hour meter for the eighth latest PD	8 byte	000001A7
CS		2 byte	27

1, 2, 4, 5: PD data	
0	No PD
1	Not used
2	P-POWER
3	SCAN
4	SCN-5V
5	Y-DRIVE
6	Y-DCDC
7	Y-SUS
8	Address
9	X-DRIVE
A	X-DCDC
B	X-SUS
C	DIG-DCDC
D	Not used
E	Not used
F	UNKNOWN

9.3.8 QSD (SD LOGS)

The command QSD is for acquiring the data from the 8 latest shutdown (SD) logs.

Command Format	Effective Operation Modes	Function	Remarks
[QSD]	All operations	To acquire data on the shutdown logs	Return data: 3 (ECO) + 80 (DATA) + 2 (CS) = 85 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QSD
1	Latest SD data	1 byte	1
2	Latest SD subcategory data	1 byte	0
3	Data from the hour meter for the latest SD	8 byte	00752013
4	Second latest SD data	1 byte	5
5	Second latest SD subcategory data	1 byte	0
6	Data from the hour meter for the second latest SD	8 byte	00495204
7	Third latest SD data	1 byte	2
8	Third latest SD subcategory data	1 byte	3
9	Data from the hour meter for the third latest SD	8 byte	00100355
10	Fourth latest SD data	1 byte	2
11	Fourth latest SD subcategory data	1 byte	5
12	Data from the hour meter for the fourth latest SD	8 byte	00075620
13	Fifth latest SD data	1 byte	1
14	Fifth latest SD subcategory data	1 byte	0
15	Data from the hour meter for the fifth latest SD	8 byte	00000852
16	Sixth latest SD data	1 byte	2
17	Sixth latest SD subcategory data	1 byte	5
18	Data from the hour meter for the sixth latest SD	8 byte	000000451
19	Seventh latest SD data	1 byte	0
20	Seventh latest SD subcategory data	1 byte	0
21	Data from the hour meter for the seventh latest SD	8 byte	00000000
22	Eighth latest SD data	1 byte	0
23	Eighth latest SD subcategory data	1 byte	0
24	Data from the hour meter for the eighth latest SD	8 byte	00000000
CS		2 Byte	7D

• SD data	
0	No SD
1	SQ_LSI
2	MDU-IIC
3	RST2
4	TEMP

• SD subcategory (SQ_LSI)	
0	No SD-Sub data
1	Communication error
2	Drive stop
3	BUSY
4	Version mismatching (H/S)
5	Version mismatching (M/S)

• SD subcategory (MDU-IIC)	
0	No SD-Sub data
1	EEPROM
2	BACKUP
3	DAC1
4	DAC2

• SD subcategory (TEMP)	
0	No SD-Sub data
1	TEMP1 (high temperature)
2	TEMP1 (low temperature)

9.3.9 QSE (DESTINATION PECULIAR INFORMATION)

Induce it peculiar, individual information is acquired.

A

Command Format	Effective Operation Modes	Function	Remarks
[QSE]	Every time	Output of status	

Order	Part	Data Arrangement	Data Length	Output Example
0	—	Received Command name	3 byte	QSE
1		Reserved	4 byte	****
2		DTV Hardware Version	4 byte	0345
3		USER PASSWORD	4 byte	1234
4	—	Check Sum	2 byte	03

B

C

9.3.10 QMT (TEMPERATURE / FAN ROTATION / ROOM LIGHT SENSOR)

Temperature information (TEMP2) / FAN rotation state / Room light sensor information on the MTB side is returned.

Command Format	Effective Operation Modes	Function	Remarks
[QMT]	Every time	Output of status	A/D value of MTB-side's temperature/FAN rotating status

Order	Part	Data Arrangement	Data Length	Output Example
0	—	Received Command name	3 byte	QMT
1	MTB	A/D value of MTB-side temperature	3 byte	267
2		MTB-side FAN rotating speed (0: STOP, 1: LOW, 2: HIGH)	1 byte	1
3		A/D value of room light sensor	3 byte	009
4		Level of room light sensor (Value: 1 to 5)	1 byte	5

D

E

F

9.3.11 QNG (SHUTDOWN INFORMATION OF MTB)

MTB side's shutdown information is acquired.

Command Format	Effective Operation Modes	Function	Remarks
[QNG]	Every time	Output of status	

Order	Part	Data Arrangement	Data Length	Output Example
0	—	Received Command name	3 byte	QNG
1	MTB	1st latest NG No.	1 byte	0
2		Subcategory No. for the 1st latest NG.	1 byte	0
3		MTB hour meter for the 1st latest NG.	7 byte	0000000
4		Reserved	3 byte	Fixed on 000
5		2nd latest NG No.	1 byte	0
6		Subcategory No. for the 2nd latest NG.	1 byte	0
7		MTB hour meter for the 2nd latest NG.	7 byte	0000000
8		Reserved	3 byte	Fixed on 000
9		3rd latest NG No.	1 byte	0
10		Subcategory No. for the 3rd latest NG.	1 byte	0
11		MTB hour meter for the 3rd latest NG.	7 byte	0000000
12		Reserved	3 byte	Fixed on 000
:		:	:	
29		8th latest NG No.	1 byte	0
30		Subcategory No. for the 8th latest NG.	1 byte	0
31		MTB hour meter for the 8th latest NG.	7 byte	0000000
32		Reserved	3 byte	Fixed on 000
33	—	Check Sum	2 byte	00

< SD Information No. >

Frequency *	Part	Part	Remarks (Operation)
5	MTB part	Shutdown signal from audio amp. / short-circuit of speaker terminal	Shutdown after 30 seconds warning
6		Failure of communication with Module microcomputer	Immediately Shutdown
7		3-wire serial communication of Main microcomputer	Go to No. 7 Subcategory Information
8		IIC communication failure of MTB side	Go to No. 8 Subcategory Information
9		Communication failure of Main microcomputer	Immediately Shutdown
10(A)		Failure of FAN	Go to No. 10 Subcategory Information
11(B)		Abnormally in high temperature	Shutdown after 30 seconds warning
12(C)		Failure of Digital Tuner	Go to No. 12 Subcategory Information
13(D)		Failure of Power Supply at MTB side	Go to No. 13 Subcategory Information
15(F)		Failure of Main EEPROM	Immediately Shutdown

*: Indicates the frequency of Blue LED flashing when the shutdown is occurred.

< No. 7 Subcategory Information on "Failure in 3-wire serial communication of Main microcomputer" >

A

Value	Shutdown Factor	Remarks (Operation)
1	Communication error of IF microcomputer	Shutdown
2	Communication error of sequence processor	Shutdown

< No. 8 Subcategory Information on "Failure in IIC communication of MTB side" >

B

Value	Shutdown Factor	Remarks (Operation)
1	Tuner 1	Shutdown
2	MSP/MAP	Shutdown
3	AV Switch	Shutdown
4	RGB Switch	Shutdown
5	VDEC	Shutdown
6	VDEC-SDRAM	Shutdown
7	AD/PLL	Shutdown
8	HDMI	Shutdown
D	COFDEM	Shutdown

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F

< No. 10 Subcategory Information on "Abnormally in FAN" >

Value	Shutdown Factor	Remarks (Operation)
1	FAN 1	Shutdown
2	FAN 2 (FHD only)	Shutdown

< No. 12 Subcategory Information on "Failure in Digital Tuner" >

Value	Shutdown Factor	Remarks (Operation)
1	DTV starting failure	Communication stop
2	DTV Antenna	Warning indication

< No. 13 Subcategory Information on "Failure in Power supply at MTB side" >

Value	Shutdown Factor	Remarks (Operation)
1	RST 2	Shutdown
2	RST 4	Shutdown

9.3.12 QSI (INPUT SIGNAL DATA)

The command QSI is for acquiring all data on input video signals.

Command Format	Effective Operation Modes	Function	Remarks
[QSI]	All operations	To acquire all data on input video signals	Return data: 3 (ECO) + 66 (DATA) + 2 (CS) = 71 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QSI
1	Type of drive sequence	3 Byte	60V
2	Standard/nonstandard	1 Byte	S
3	Type of ABL/WB tables	2 Byte	T1
4	Total value of PCN	4 Byte	0256
5	Total value of PRH	4 Byte	0256
6	Total value of PGH	4 Byte	0256
7	Total value of PBH	4 Byte	0256
8	Total value of PBR	4 Byte	0512
9	Total value of PRL	4 Byte	0512
10	Total value of PGL	4 Byte	0512
11	Total value of PBL	4 Byte	0512
12	Total value of ABL	3 Byte	128
13	Detection of V frequency	4 Byte	6002
14	Reserved	1 Byte	*
15	Reserved	3 Byte	***
16	Obtained APL data	4 Byte	1023
17	Number of SUS pulses	4 Byte	0457
18	Result of detection of still picture	1 Byte	1
19	Result of detection of cracking in the panel	1 Byte	1
20	Result of detection for scanning protection	1 Byte	1
21	Result of detection for external protection	1 Byte	1
22	Transition of protection operation	1 Byte	0
23	Reserved	4 Byte	****
CS		2 Byte	27

9.3.13 DRV (PANEL DRIVE-POWER ON / OFF)

Drive ON/OFF: ON/OFF control of panel drive-power system

Command Format	Effective Operation Modes	Function	Remarks
[DRV+S00]	Every time	DRIVE OFF	At standby mode, when 10 seconds passed after issuing [DRV+S00], command becomes invalid.
[DRV+S01]	Every time	DRIVE ON (default)	

Once the DRIVE OFF command is accepted, DRIVE OFF cannot be canceled by pressing the DRIVE OFF key again or by turning the unit off then back on with the STANDBY OFF/ON key.

To cancel DRIVE OFF, restart the unit by unplugging then again plugging in the power cord.

9.3.14 FAY / FAN (ADJ. COMMANDS PERMISSION / PROHIBITION)

The commands FAY/FAN are for prohibiting/permitting panel/MTB-adjustment commands.

Command Format	Operation		Remarks
	Effective Operation Modes	Control	
[FAY]	Normal operation mode while the power is on	Adjustment command is valid.	For details, refer to the section “6.1.3 FUNCTIONS WHEN ENTERING THE SERVICE FACTORY MODE.”
[FAN]	During FAY	Adjustment command is invalid.	

9.3.15 FAJ / UAJ / CBU / BCP (BACKUP FUNCTION FOR ADJUSTMENT VALUE)

When the DIGITAL Assy is to be replaced, adjustment values can be copied from the backup EEPROM to the EEPROM of the Assy for service.

Command Format	Operation			Remarks
	Effective Operation Modes	Control		
[FAJ]	During FAY	To make the flag setting that indicating that adjustment of the panel unit has been completed	Writing 00 to the 4 k byte ROM and copying to the 2 k byte ROM	This takes at least 350 mS.
[UAJ]		To make the flag setting that indicating that adjustment of the main unit has not been completed	Writing F0 to the 4 k byte ROM	
[CBU]		To make the flag setting that indicating that backup data have not been copied	Writing F0 to the 2 k byte ROM	The backup ROM is initialized.
[BCP]		To copy Digital backup data to EEPROM	Copying backup data	



5



6



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8



A



B



C



D



E



F



5



6



7



8

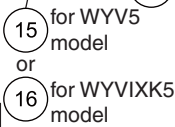


PDP-4280XA

4

- The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Screws adjacent to  mark on product are used for disassembly.
- For the applying amount of lubricants or glue, follow the instructions in this manual.
(In the case of no amount instructions, apply as you think it appropriate.)

PACKING SECTION



(1) PACKING SECTION PARTS LIST

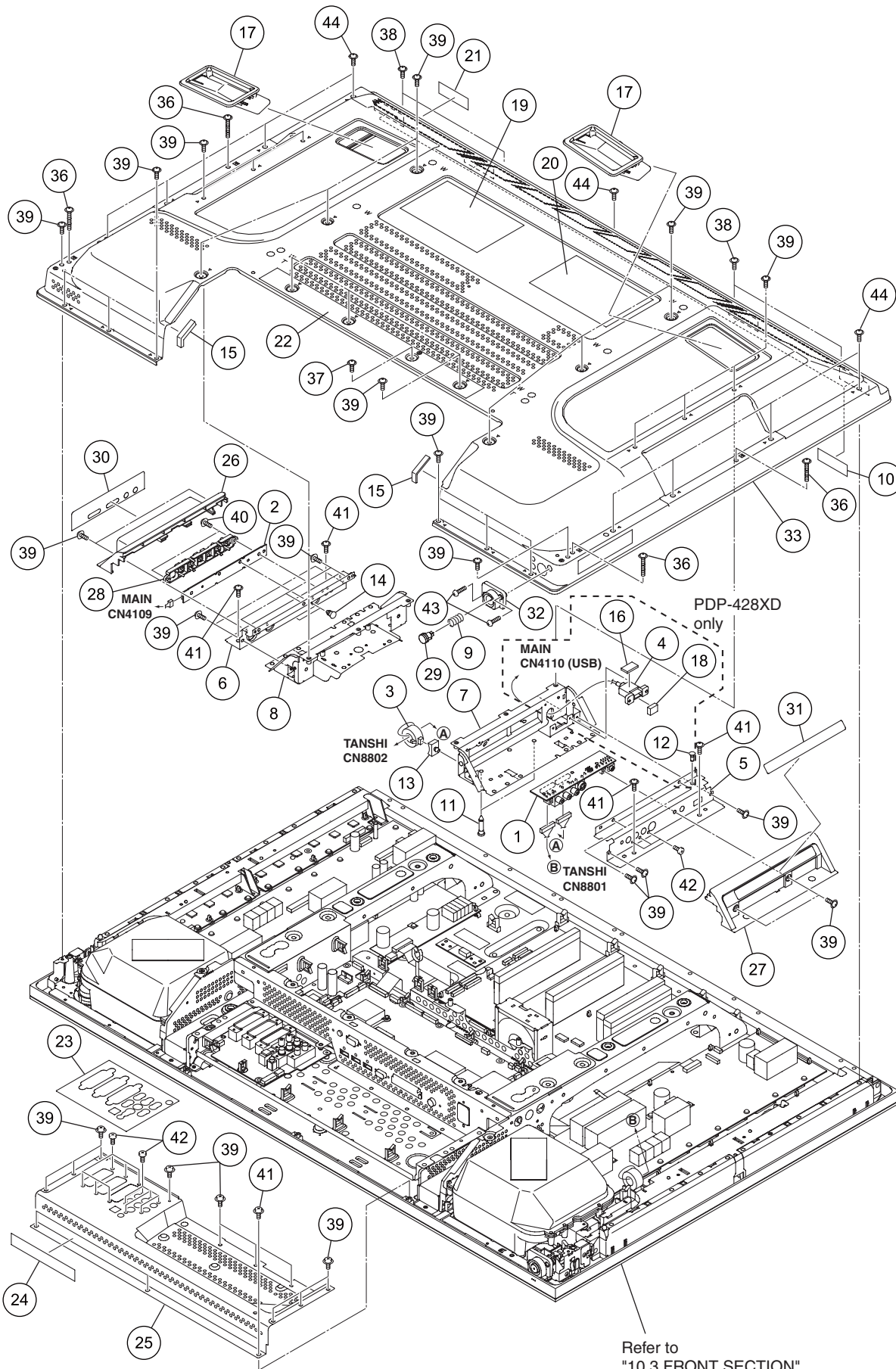
Mark No.	Description	Part No.	Mark No.	Description	Part No.
⚠ 1	Power Cord (2 m)	ADG1214	14	Polyethylene Bag	AHG1337
⚠ 2	Power Cord (2 m)	See Contrast table (2)	NSP 15	Catalogue Bag	AHG1340
3	Remote Control Unit	See Contrast table (2)	16	Polyethylene Bag	See Contrast table (2)
4	Battery Cover	See Contrast table (2)	17	Pad (428 B-L)	See Contrast table (2)
NSP 5	Dry Cell Battery (R06, AA)	VEM1031	18	Pad (428 B-R)	See Contrast table (2)
⚠ 6	Ferrite Core (L5321)	ATX1039	19	Pad (428 T-L)	See Contrast table (2)
7	Binder Assy	AEC1908	20	Pad (428 T-R)	See Contrast table (2)
8	Cleaning Cloth	AED1285	21	Power Cord Lid	See Contrast table (2)
9	Operating Instructions (English, French, German)	See Contrast table (2)	22	Under Carton	See Contrast table (2)
			23	Upper Carton	See Contrast table (2)
10	Operating Instructions (Italian, Spanish, Dutch)	See Contrast table (2)	24	Mirror Mat	See Contrast table (2)
11	Caution Card	See Contrast table (2)	25	After Image Caution	See Contrast table (2)
12	Cleaning Caution	See Contrast table (2)	26	Block Diagram	See Contrast table (2)
NSP 13	Warranty Card	ARY1114	27	Band Assy	See Contrast table (2)
			28	Carton Board	See Contrast table (2)

(2) CONTRAST TABLE

PDP-4280XA/WYV5, WYVIXK5, PDP-4280XD/WYV5, WYVIXK5, PDP-428XD/WYV5 and WYVIXK5 are constructed the same except for the following:

Mark	No.	Symbol and Description	PDP-4280XA /WYV5	PDP-4280XA /WYVIXK5	PDP-4280XD /WYV5	PDP-4280XD /WYVIXK5	PDP-428XD /WYV5	PDP-428XD /WYVIXK5
⚠	2	Power Cord (2 m)	Not used	ADG1223	Not used	ADG1223	Not used	ADG1223
	3	Remote Control Unit	AXD1553	AXD1553	AXD1552	AXD1552	AXD1551	AXD1551
	4	Battery Cover	AZA7424	AZA7424	AZA7424	AZA7424	AZN2626	AZN2626
	9	Operating Instructions (English, French, German)	ARE1478	ARE1477	ARE1485	ARE1476	ARE1484	ARE1475
	10	Operating Instructions (Italian, Spanish, Dutch)	Not used	Not used	ARC1602	ARC1587	ARC1601	ARC1586
	11	Caution Card	ARM1232	ARM1310	ARM1232	ARM1310	ARM1232	ARM1310
	12	Cleaning Caution	ARM1283	ARM1311	ARM1283	ARM1311	ARM1283	ARM1311
	16	Polyethylene Bag	Not used	AHG1326	Not used	AHG1326	Not used	AHG1326
	17	Pad (B-L)	AHA2668	AHA2600	AHA2668	AHA2600	AHA2668	AHA2600
	18	Pad (B-R)	AHA2669	AHA2601	AHA2669	AHA2601	AHA2669	AHA2601
	19	Pad (T-L)	AHA2670	AHA2554	AHA2670	AHA2554	AHA2670	AHA2554
	20	Pad (T-R)	AHA2671	AHA2555	AHA2671	AHA2555	AHA2671	AHA2555
	21	Power Cord Lid	AHC1085	AHC1087	AHC1085	AHC1087	AHC1085	AHC1087
	22	Under Carton (428)	AHD3586	Not used	AHD3586	Not used	AHD3586	Not used
	22	Under Carton (427)	Not used	AHD3496	Not used	AHD3496	Not used	AHD3496
	23	Upper Carton (4280XA)	AHD3595	AHD3618	Not used	Not used	Not used	Not used
	23	Upper Carton (4280XD)	Not used	Not used	AHD3643	AHD3594	Not used	Not used
	23	Upper Carton (428XD)	Not used	Not used	Not used	Not used	AHD3647	AHD3593
	24	Mirror Mat	AHG1284	AHG1327	AHG1284	AHG1327	AHG1284	AHG1327
	25	After Image Caution	ARM1350	ARM1349	ARM1350	ARM1349	ARM1350	ARM1349
	26	Block Diagram	Not used	ARY1202	Not used	ARY1202	Not used	ARY1202
	27	Band Assy	AXY1192	AXY1192	AXY1192	AXY1192	Not used	Not used
	28	Carton Board	AHB1297	Not used	AHB1297	Not used	AHB1297	Not used

10.2 REAR SECTION



Refer to
"10.3 FRONT SECTION".

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(1) REAR SECTION PARTS LIST

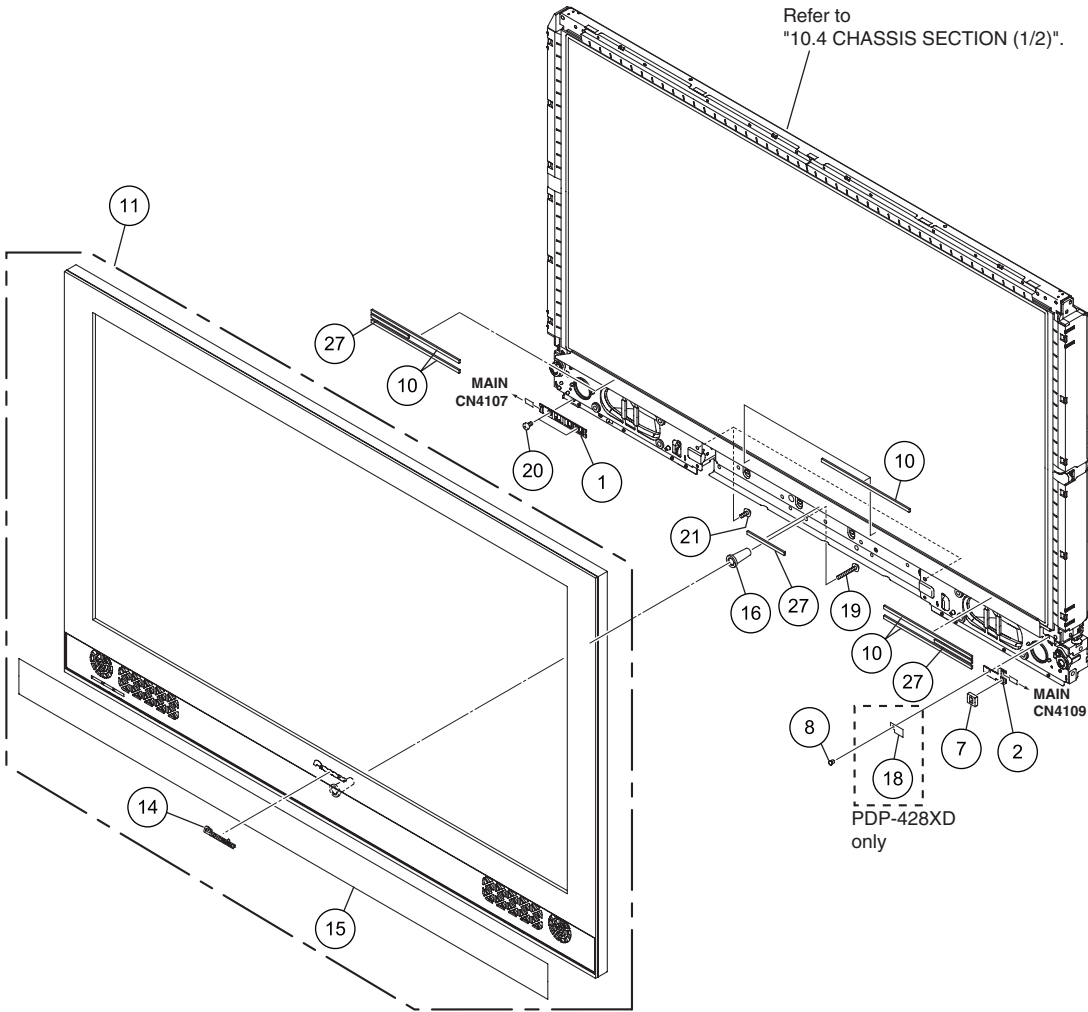
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	SIDE IO Assy	AWW1253	24	Label C	See Contrast table (2)
2	SIDE KEY Assy	AWW1286	25	Terminal Panel B	See Contrast table (2)
3	Ferrite Core (F10)	ATX1060			
4	USB Cable (J301)	See Contrast table (2)	26	Function Button Panel	AMB2906
5	Side Input Panel	See Contrast table (2)	27	Side Input Cover	AMB2911
			28	Function Button (E)	AAC1565
6	Function Button Base	See Contrast table (2)	29	Power Button	AAD4145
7	Side Input Shield	See Contrast table (2)	30	Function Button Sheet (E)	AAK2896
8	Function Button Shield	See Contrast table (2)			
9	Coil Spring	ABH1125	31	Input Cover Label	See Contrast table (2)
10	Rear Case Cushion	AEB1439	32	Power Button Holder	AMR3539
			33	Rear Case (428)	ANE1667
11	Spacer	AEC1288	34	•••••	
12	PCB Spacer	See Contrast table (2)	35	•••••	
13	Ferrite Core Holder	AEC1818			
14	Locking Card Spacer	AEC2019	36	Screw (3 x 40P)	ABA1332
15	Protect Sheet C	AED1300	37	Screw	ABA1341
			38	Screw (4 x 18)	BBZ40P160FTB
16	USB Spacer A	See Contrast table (2)	39	Screw	AMZ30P060FTB
17	Inner Grip Assy	See Contrast table (2)	40	Screw	AMZ30P080FTC
18	Gasket (USB)	See Contrast table (2)			
NSP 19	Name Label	See Contrast table (2)	41	Screw	APZ30P080FTB
20	Bolt Caution Label (E)	AAX3533	42	Screw	BPZ30P080FTB
			43	Screw	BPZ30P140FTB
21	Serial Sheet	AAX3143	44	Screw	TBZ40P080FTB
22	Label A	See Contrast table (2)			
23	Label B	See Contrast table (2)			

(2) CONTRAST TABLE

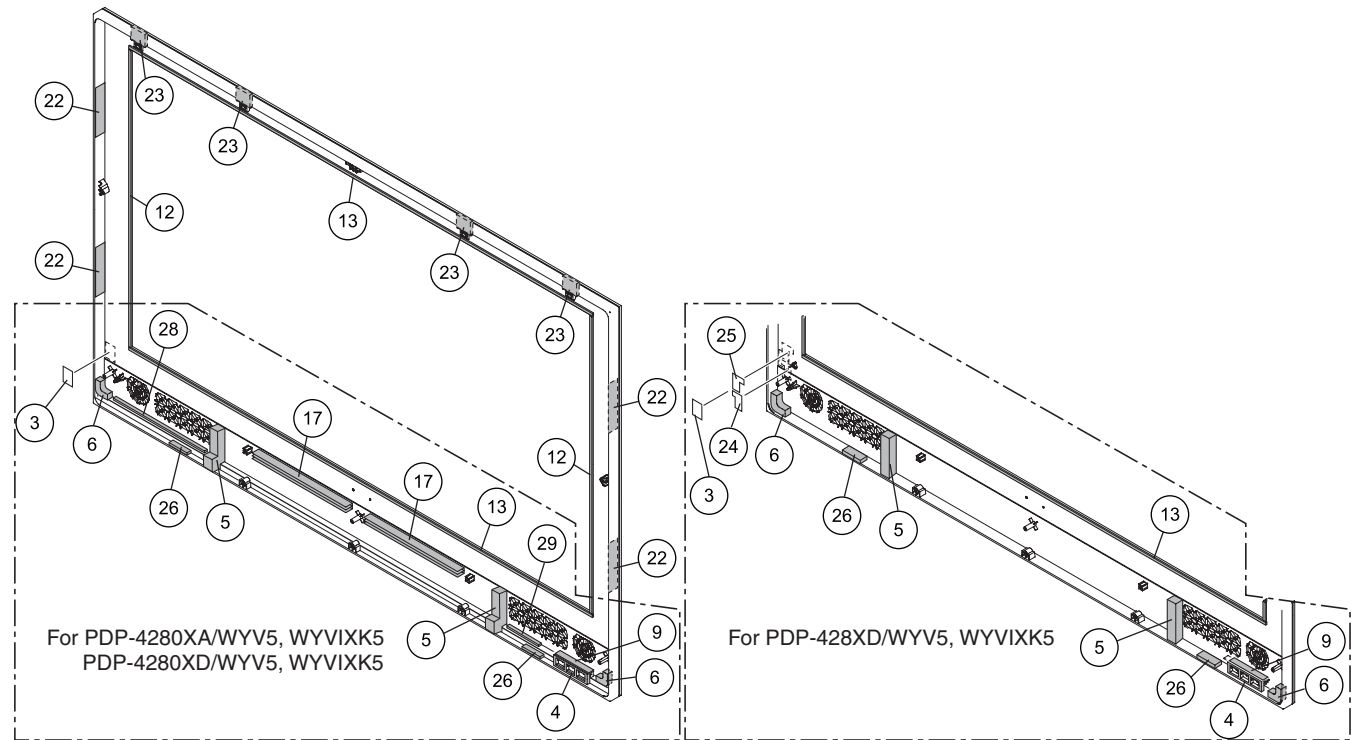
PDP-4280XA/WYV5, WYVIXK5, PDP-4280XD/WYV5, WYVIXK5, PDP-428XD/WYV5 and WYVIXK5 are constructed the same except for the following:

Mark	No.	Symbol and Description	PDP-4280XA /WYV5	PDP-4280XA /WYVIXK5	PDP-4280XD /WYV5	PDP-4280XD /WYVIXK5	PDP-428XD /WYV5	PDP-428XD /WYVIXK5
	4	USB Cable (J301)	Not used	Not used	Not used	Not used	ADF1033	ADF1033
	5	Side Input Panel (8E)	ANC2461	ANC2458	ANC2461	ANC2458	Not used	Not used
	5	Side Input Panel (8ES)	Not used	Not used	Not used	Not used	ANC2460	ANC2459
	6	Function Button Base	ANG2923	ANG3066	ANG2923	ANG3066	ANG2923	ANG3066
	7	Side Input Shield	ANK1834	ANK1938	ANK1834	ANK1938	ANK1834	ANK1938
	8	Function Button Shield	ANK1835	ANK1939	ANK1835	ANK1939	ANK1835	ANK1939
	12	PCB Spacer	Not used	Not used	Not used	Not used	AEC1570	AEC1570
	16	USB Spacer A	Not used	Not used	Not used	Not used	AED1317	AED1317
	17	Inner Grip Assy	AMR3434	AMR3693	AMR3434	AMR3693	AMR3434	AMR3693
	18	Gasket (USB)	Not used	Not used	Not used	Not used	ANK1846	ANK1846
NSP	19	Name Label (4280XA)	AAL2937	AAL2943	Not used	Not used	Not used	Not used
NSP	19	Name Label (4280XD)	Not used	Not used	AAL3002	AAL2939	Not used	Not used
NSP	19	Name Label (428XD)	Not used	Not used	Not used	Not used	AAL3006	AAL2941
	22	Label A (EA)	AAX3479	AAX3479	Not used	Not used	Not used	Not used
	22	Label A (ED)	Not used	Not used	AAX3480	AAX3480	AAX3480	AAX3480
	23	Label B (ERA)	AAX3536	AAX3536	Not used	Not used	Not used	Not used
	23	Label B (ERD)	Not used	Not used	AAX3537	AAX3537	Not used	Not used
	23	Label B (ESD)	Not used	Not used	Not used	Not used	AAX3538	AAX3538
	24	Label C (ERA)	AAX3502	AAX3502	Not used	Not used	Not used	Not used
	24	Label C (ERD)	Not used	Not used	AAX3503	AAX3503	Not used	Not used
	24	Label C (ESD)	Not used	Not used	Not used	Not used	AAX3504	AAX3504
	25	Terminal Panel B (42ER)	ANC2448	ANC2448	ANC2448	ANC2448	Not used	Not used
	25	Terminal Panel B (42ES)	Not used	Not used	Not used	Not used	ANC2449	ANC2449
	31	Input Cover Label E	AAX3375	AAX3396	AAX3375	AAX3396	Not used	Not used
	31	Input Cover Label 8ES	Not used	Not used	Not used	Not used	AAX3510	AAX3510

10.3 FRONT SECTION



Rear view



(1) FRONT SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	42/60LED Assy	AWW1276	17	Frame	See Contrast table (2)
2	42IR Assy	See Contrast table (2)	18	Sensor Filter	See Contrast table (2)
3	IR Reducer	See Contrast table (2)	19	Screw (3 x 30P)	ABA1350
4	Blind Cushion 427HX	AEB1443	20	Screw (M3 x 4)	ABA1354
5	Speaker Cushion	AEB1452			
			21	Screw	APZ30P080FTB
6	Speaker Cushion S	AEB1460	22	Insulation Sheet A	AED1283
7	IR Block Cushion	AEB1465	23	Front Cushion (42)	AEB1484
8	Nylon Rivet	AEC1671	24	Sensor Cushion A (428)	See Contrast table (2)
9	Insulation Sheet B	AED1284	25	Sensor Cushion B (428)	See Contrast table (2)
10	Isolation Sheet	AED1289			
			26	Front Case Cushion	See Contrast table (2)
11	Front Case Assy	See Contrast table (2)	27	Isolation Cushion B	AED1326
NSP 12	Panel Cushion V (42)	AED1323	28	Insulation Sheet	See Contrast table (2)
NSP 13	Panel Cushion H (42)	AED1322	29	Insulation Sheet B	See Contrast table (2)
14	Pioneer Name Plate (42)	AAM1115			
15	Punching Sheet	See Contrast table (2)			
16	Front Collar	AMR3695			

(2) CONTRAST TABLE

PDP-4280XA/WYV5, WYVIXK5, PDP-4280XD/WYV5, WYVIXK5, PDP-428XD/WYV5 and WYVIXK5 are constructed the same except for the following:

Mark	No.	Symbol and Description	PDP-4280XA /WYV5	PDP-4280XA /WYVIXK5	PDP-4280XD /WYV5	PDP-4280XD /WYVIXK5	PDP-428XD /WYV5	PDP-428XD /WYVIXK5
	2	42IR Assy	AWW1282	AWW1282	AWW1282	AWW1282	Not used	Not used
	2	42RLS&IR Assy	Not used	Not used	Not used	Not used	AWW1277	AWW1277
	3	IR Reducer	AAX3455	AAX3455	AAX3455	AAX3455	Not used	Not used
	3	IR Sheet B (428)	Not used	Not used	Not used	Not used	AAX3551	AAX3551
	11	Front Case Assy (4280XA)	AMB3021	AMB3052	Not used	Not used	Not used	Not used
	11	Front Case Assy (4280XD)	Not used	Not used	AMB3020	AMB3051	Not used	Not used
	11	Front Case Assy (428XD)	Not used	Not used	Not used	Not used	AMB3016	AMB3022
	15	Punching Sheet (42)	AAS1014	AAS1014	AAS1014	AAS1014	Not used	Not used
	15	Punching Sheet (428)	Not used	Not used	Not used	Not used	AAS1016	AAS1016
	17	Frame	AMR3620	AMR3620	AMR3620	AMR3620	Not used	Not used
	18	Sensor Filter	Not used	Not used	Not used	Not used	AAK2926	AAK2926
	24	Sensor Cushion A (428)	Not used	Not used	Not used	Not used	AEB1485	AEB1485
	25	Sensor Cushion B (428)	Not used	Not used	Not used	Not used	AEB1486	AEB1486
	26	Front Case Cushion (42B)	AEB1462	AEB1462	AEB1462	AEB1462	Not used	Not used
	26	Front Case Cushion (428)	Not used	Not used	Not used	Not used	AEB1488	AEB1488
	28	Insulation Sheet	AED1289	AED1289	AED1289	AED1289	Not used	Not used
	29	Insulation Sheet B	AED1284	AED1284	AED1284	AED1284	Not used	Not used

10.4 CHASSIS SECTION (1/2)

A

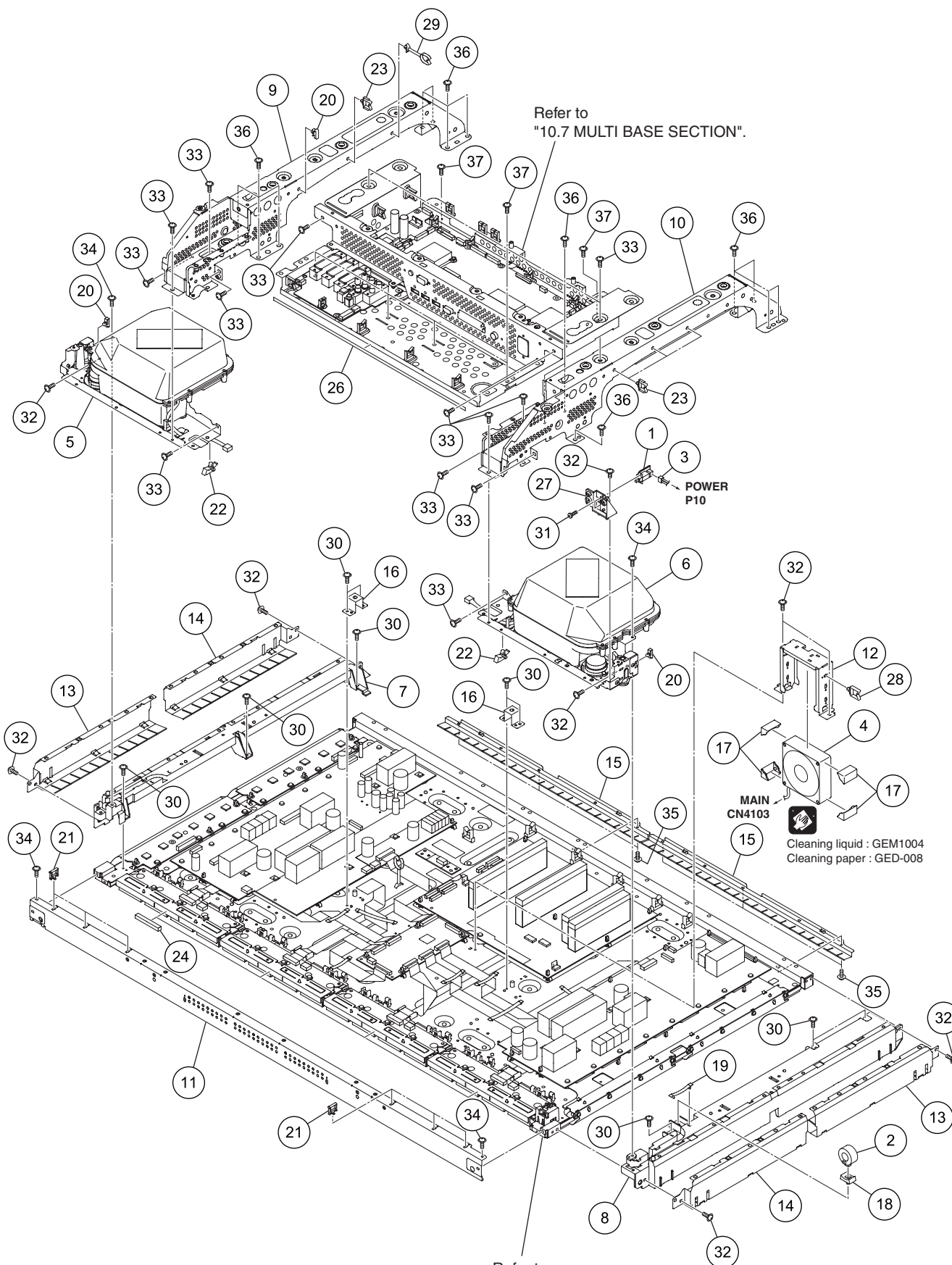
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C

D

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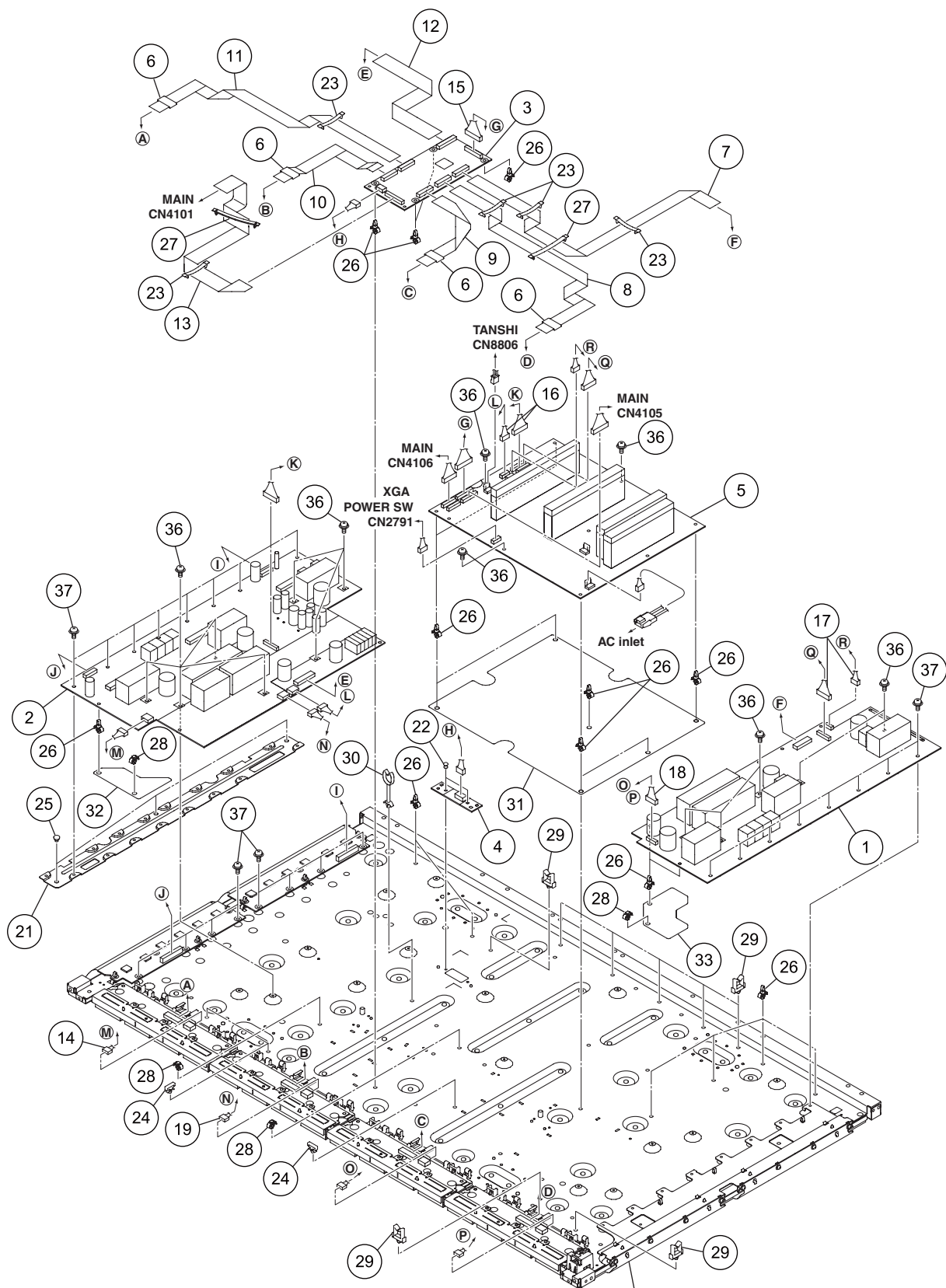
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CHASSIS SECTION (1/2) PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	XGA POWER SW Assy	AWW1261
2	Ferrite Core (L1)	ATX1044
3	Housing Wire (J103)	ADX3536
⚠ 4	Fan Motor 80 x 25L	AXM1057
5	Speaker Box Assy L	AMW1012
6	Speaker Box Assy R	AMW1013
7	Front Chassis VL (427)	AMA1020
8	Front Chassis VR (427)	AMA1021
9	Sub Frame Assy L (427)	ANA1943
10	Sub Frame Assy R (427)	ANA1944
11	Front Chassis H Assy	ANA2047
12	Fan Holder	ANG2833
⚠ 13	Panel Holder V1 (427)	ANG2920
⚠ 14	Panel Holder V2 (427)	ANG2921
⚠ 15	Panel Holder H (427)	ANG2922
16	Multi Base Holder	ANG2937
17	Floating Rubber 80	AEB1427
18	Ferrite Core Holder	AEC1818
19	Flat Clamp	AEC1879
20	Locking Wire Saddle	AEC1948
21	Mini Clamp	AEC2128
22	Re-use Wire Saddle	AEC2091
23	Re-use Wire Saddle	AEC2118
⚠ 24	Address Gasket (42)	ANK1877
25	•••••	
⚠ 26	Gasket D	ANK1840
27	Switch Holder (428)	AMR3694
28	Re-use Wire Saddle	AEC1945
29	Re-use HL 28	AEC2119
30	Screw	ABA1351
31	Screw	ABA1370
32	Screw	ABZ30P080FTC
33	Screw	AMZ30P060FTB
34	Screw	APZ30P080FTB
35	Screw	BBZ30P060FTC
36	Screw	TBZ40P080FTB
37	Screw	ABA1364

10.5 CHASSIS SECTION (2/2)

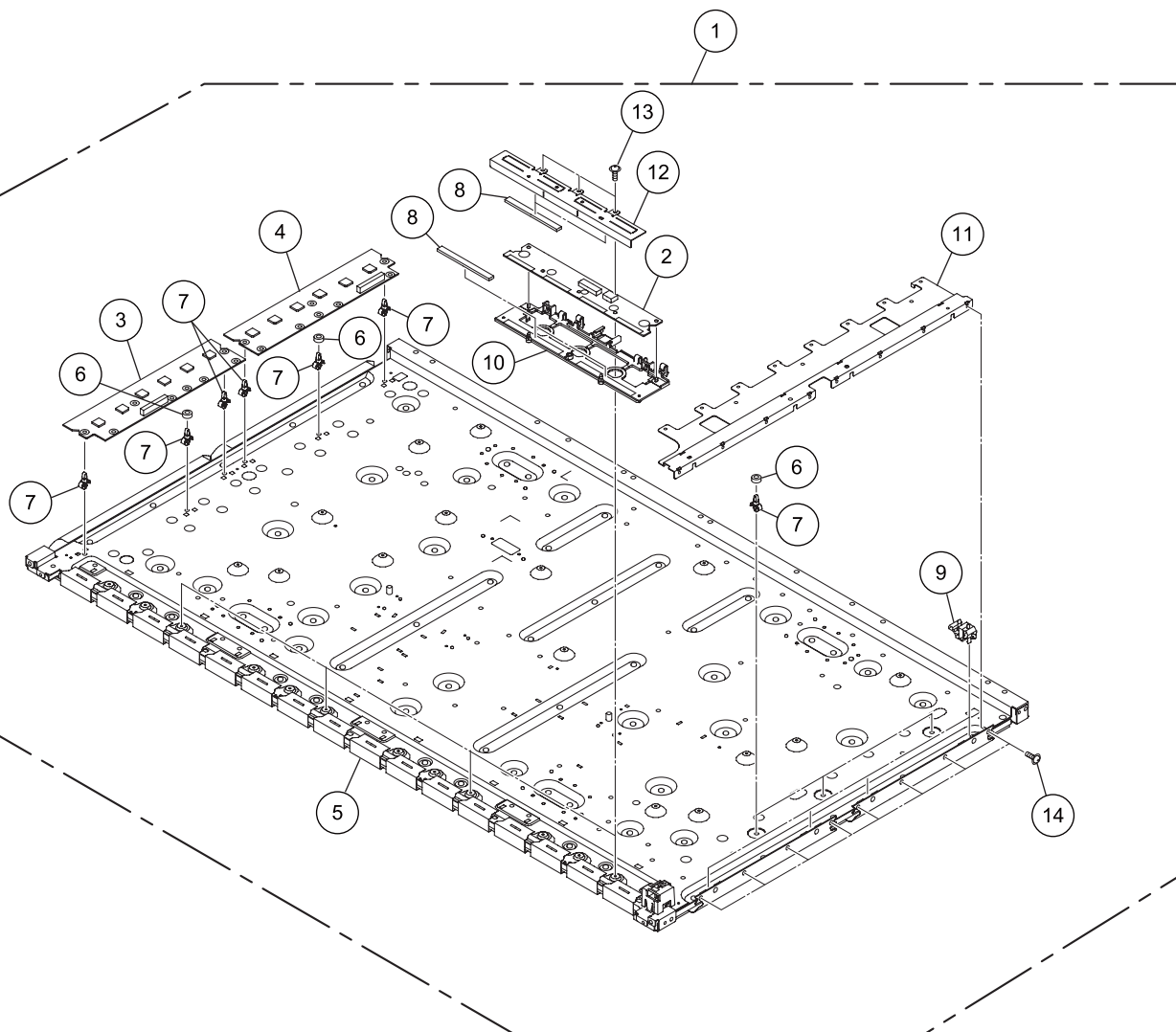


Refer to
"10.6 PANEL CHASSIS SECTION".

CHASSIS SECTION (2/2) PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	42 X DRIVE Assy	AWV2452
2	42 Y DRIVE Assy	AWW1262
3	42 DIGITAL Assy	AWW1271
4	SENSOR Assy	AWW1272
⚠ 5	POWER SUPPLY Unit	AXY1157
6	Ferrite Core (F1 - F4)	ATX1048
7	Flexible Cable (J201)	ADD1483
8	Flexible Cable (J202)	ADD1484
9	Flexible Cable (J203)	ADD1485
10	Flexible Cable (J204)	ADD1486
11	Flexible Cable (J205)	ADD1487
12	Flexible Cable (J206)	ADD1488
13	Flexible Cable (J211)	ADD1489
14	4P Housing Wire (J110)	ADX3327
15	14P&5P Housing Wire (J104)	ADX3522
16	9P&6/5P Housing Wire (J101)	ADX3534
17	8P&5P Housing Wire (J102)	ADX3535
18	8P/4P Housing Wire (J108)	ADX3537
19	4P Housing Wire (J109)	ADX3538
20	•••••	
21	Conductive Plate Y (428)	ANG3082
22	Nylon Rivet	AEC1671
23	Flat Clamp	AEC1879
24	Locking Wire Saddle	AEC1948
25	Card Spacer	AEC1957
26	PCB Spacer (Re-use)	AEC2087
27	Flat Clamp 60	AEC2104
28	Re-use Card Spacer	AEC2117
29	Re-use Wire Saddle	AEC2118
30	Re-use HL 28	AEC2119
⚠ 31	Power Sheet (8G)	AMR3708
⚠ 32	Y Drive Sheet (428)	AMR3709
⚠ 33	X Drive Sheet (428)	AMR3710
34	•••••	
35	•••••	
36	Screw	ABA1351
37	Screw	ABA1364

10.6 PANEL CHASSIS SECTION



PANEL CHASSIS SECTION PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	Panel Chassis (428) Assy	AWU1246
NSP 2	42 ADDRESS Assy	AWV2451
NSP 3	42 SCAN A Assy	AWW1266
NSP 4	42 SCAN B Assy	AWW1267
NSP 5	Plasma Panel (428) Assy	AWU1247
6	Insulation Bushing 1.5	AEB1482
7	PCB Spacer	AEC1941
8	Address Silicone A	AEH1093
9	Conductive Plate Holder	AMR3446
10	Address Holder (428)	AMR3707
11	Conductive Plate X (428)	ANG3080
12	Address Plate (428)	ANG3084
13	Screw	ABA1351
14	Screw	ABA1364

10.7 MULTI BASE SECTION

A

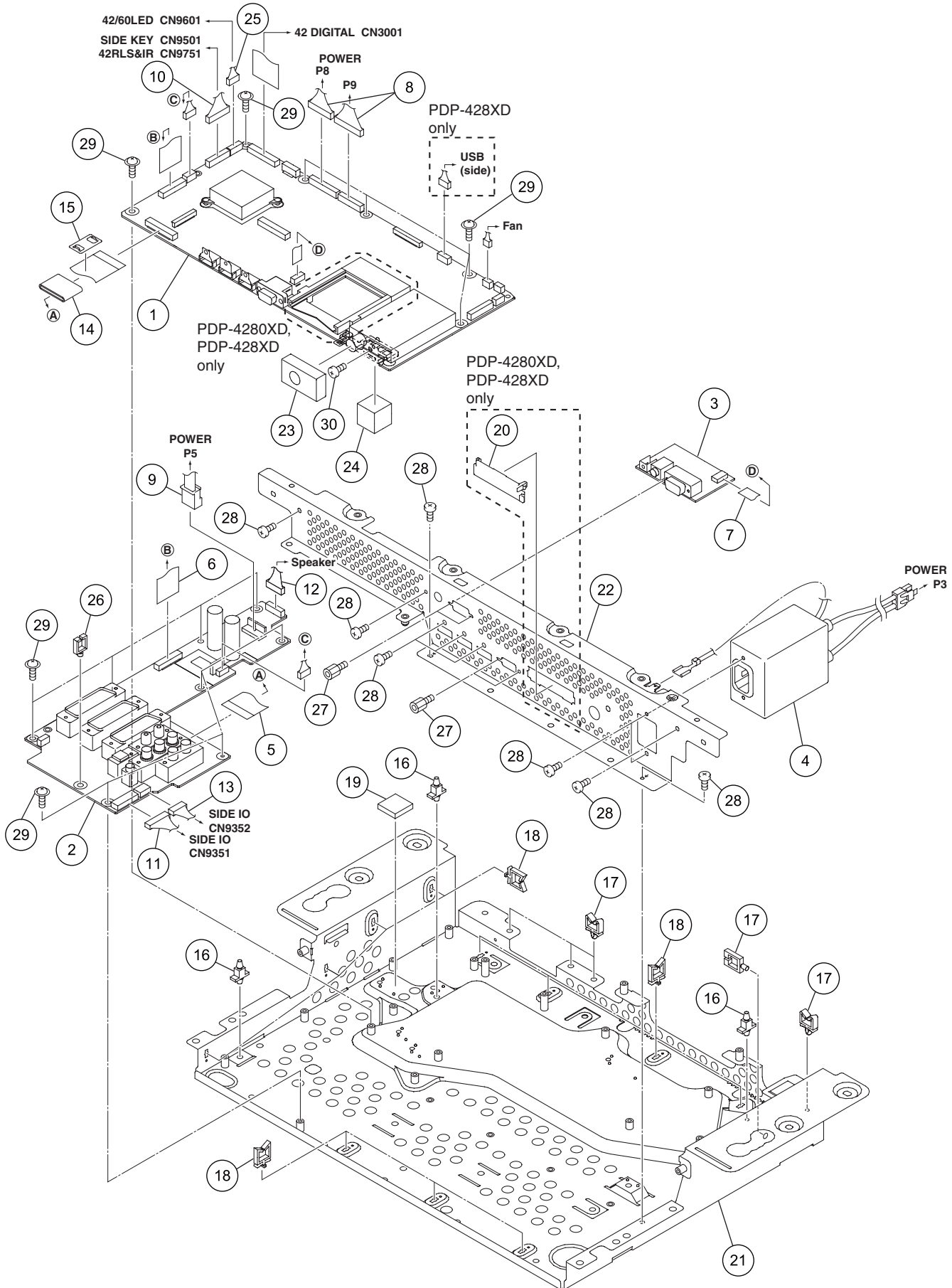
B

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D

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F



(1) MULTI BASE SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	MAIN Assy	See Contrast table (2)	16	Locking Card Spacer	AEC1429
2	TANSHI Assy	See Contrast table (2)	17	Wire Saddle	AEC1745
3	232C Assy	AWW1254	18	Re-use Wire Saddle	AEC1945
4	AC Inlet (CN1)	AKP1316	19	Silicone Sheet Audio	AEH1143
5	Flexible Cable (J212)	ADD1441	20	POD Cover	See Contrast table (2)
6	Flexible Cable (J213)	ADD1491	21	Multi Base Assy (J)	ANA2103
7	Flexible Cable (J217)	ADD1494	22	Terminal Panel A	See Contrast table (2)
8	12P&15P Housing Wire (J106)	ADX3523	23	Gasket FE	ANK1945
9	5P Housing Wire (J107)	ADX3524	24	Gasket EC	ANK1954
10	11/6/4P Housing Wire (J114)	ADX3539	25	6P Housing Wire (J115)	ADX3540
11	11P Housing Wire (J118)	ADX3541	26	Harness Clip	AEC2130
12	8P/4P Housing Wire (J119)	ADX3542	27	Hex. Head Screw	BBA1051
13	5P Housing Wire (J125)	ADX3544	28	Screw	BMZ30P060FTB
14	Ferrite Core	ATX1064	29	Screw	PMB30P080FNI
15	Ferrite Stopper	AEC1981	30	Screw (M3 x 4)	ABA1354

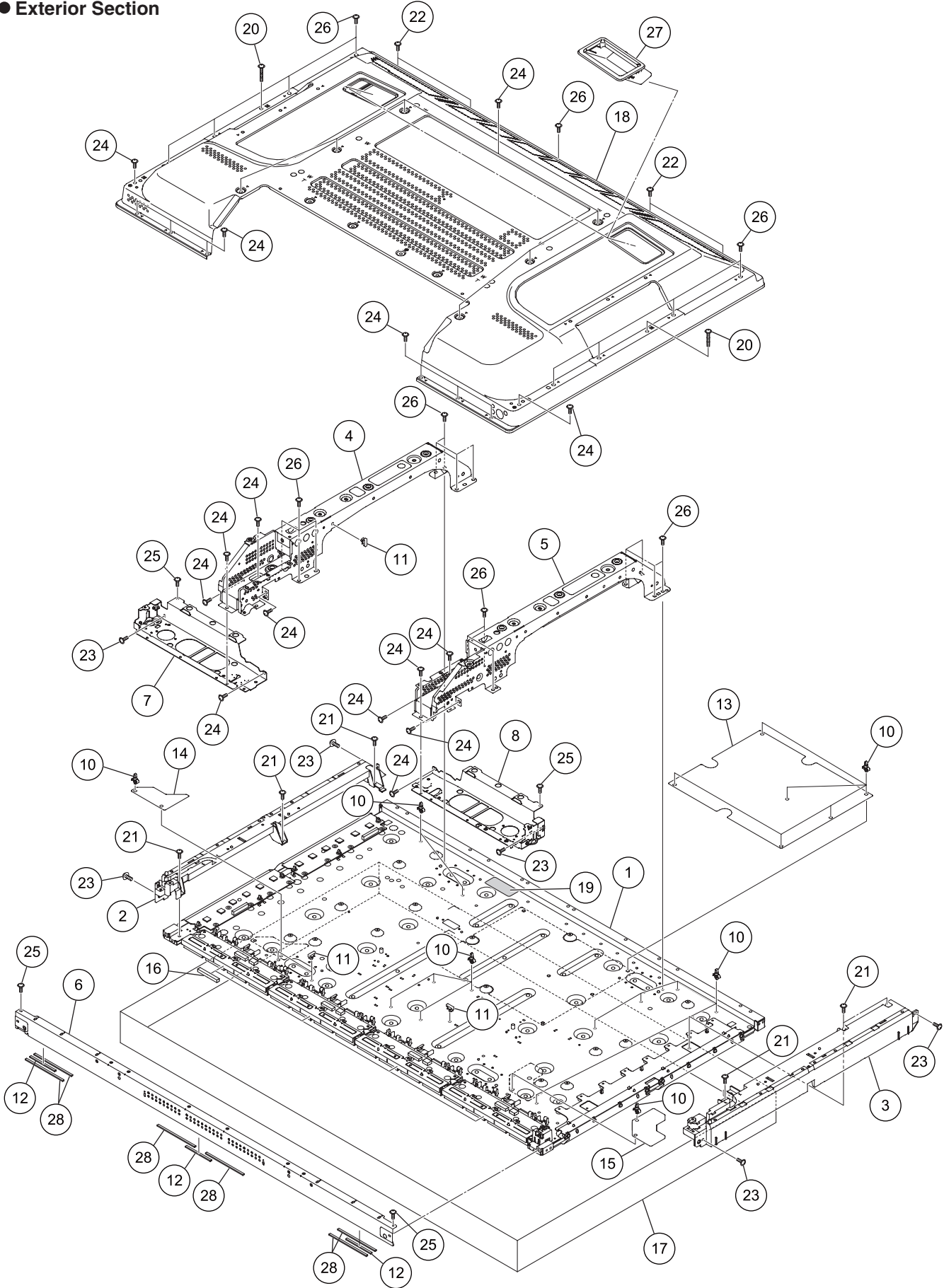
(2) CONTRAST TABLE

PDP-4280XA/WYV5, WYVIXK5, PDP-4280XD/WYV5, WYVIXK5, PDP-428XD/WYV5 and WYVIXK5 are constructed the same except for the following:

Mark	No.	Symbol and Description	PDP-4280XA /WYV5	PDP-4280XA /WYVIXK5	PDP-4280XD /WYV5	PDP-4280XD /WYVIXK5	PDP-428XD /WYV5	PDP-428XD /WYVIXK5
1	MAIN Assy	AWV2463	AWV2463	AWV2463	AWV2462	AWV2462	AWV2461	AWV2461
2	TANSHI Assy	AWW1251	AWW1251	AWW1249	AWW1249	AWW1247	AWW1247	AWW1247
20	POD Cover	Not used	Not used	AMR3542	AMR3542	AMR3542	AMR3542	AMR3542
22	Terminal Panel A (EA)	ANC2442	ANC2442	Not used	Not used	Not used	Not used	Not used
22	Terminal Panel A (ED)	Not used	Not used	ANC2441	ANC2441	ANC2441	ANC2441	ANC2441

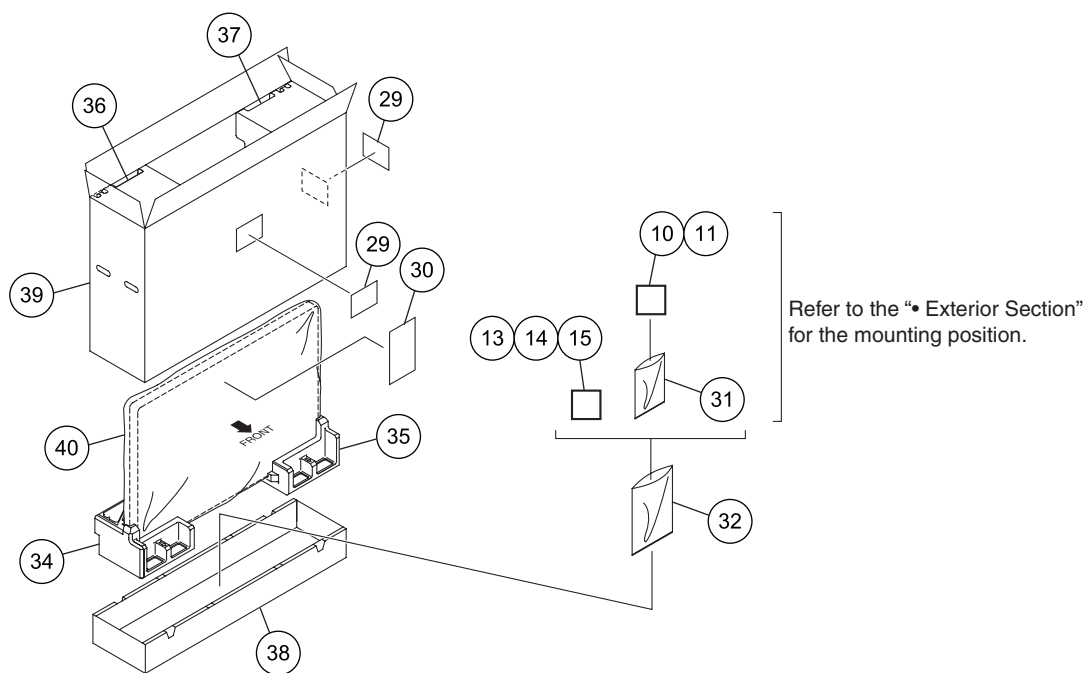
10.8 PDP SERVICE ASSY 428

● Exterior Section



PDP-4280XA

● Packing Section



PDP SERVICE ASSY 428 PARTS LIST

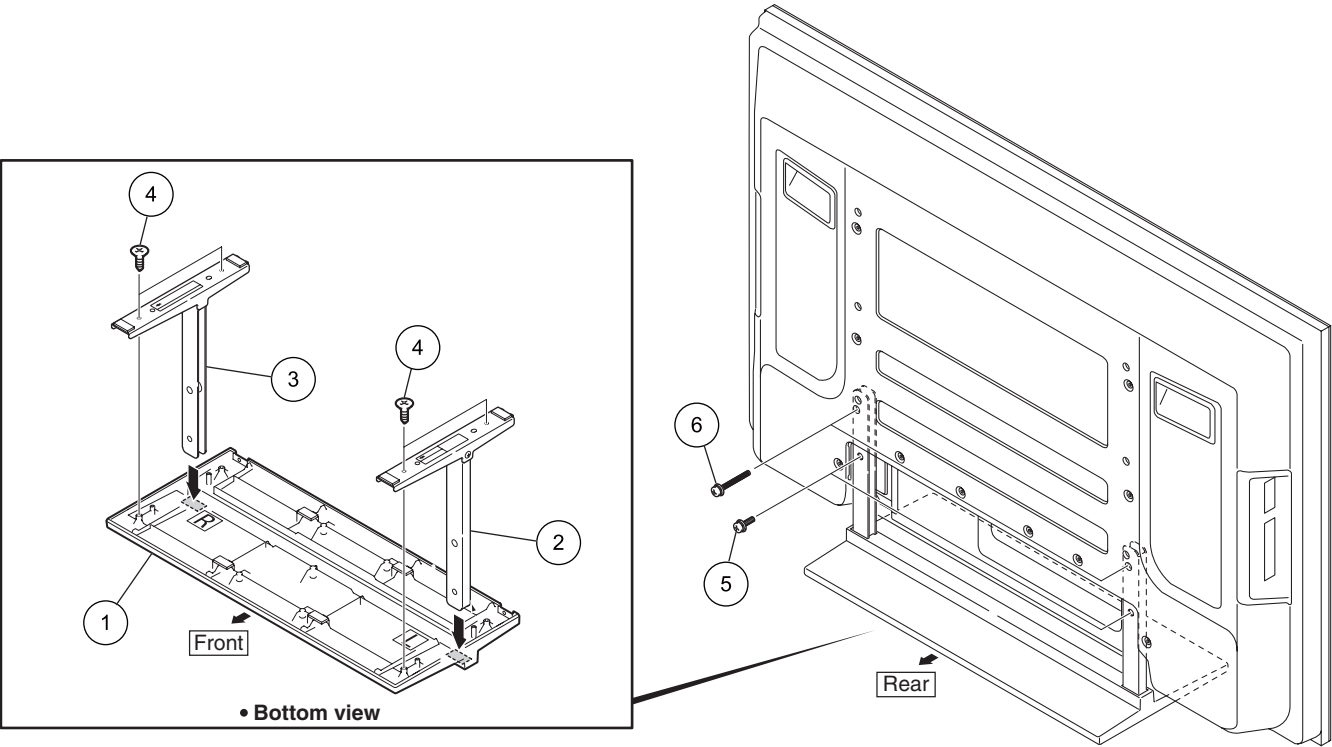
Mark No.	Description	Part No.	Mark No.	Description	Part No.
NSP 1	Panel Chassis (428) Assy	AWU1246	21	Screw	ABA1351
2	Front Chassis VL (427)	AMA1020	22	Screw (4 x 18)	ABA1353
3	Front Chassis VR (427)	AMA1021	23	Screw	ABZ30P080FTC
4	Sub Frame Assy L (427)	ANA1943	24	Screw	AMZ30P060FTB
5	Sub Frame Assy R (427)	ANA1944	25	Screw	APZ30P080FTB
6	Front Chassis H Assy (427)	ANA2047	26	Screw	TBZ40P080FTB
NSP 7	Speaker Stay L	AND1197	27	Inner Grip Assy	AMR3434
NSP 8	Speaker Stay R	AND1198	28	Isolation Sheet	AED1289
9	•••••		29	Caution Label	AAX3031
10	PCB Spacer	AEC1941	30	Caution Sheet (8G service)	ARM1369
11	Locking Wire Saddle	AEC1948	31	Polyethylene Bag S	AHG1338
12	Isolation Cushion	AED1324	NSP 32	Catalogue Bag	AHG1340
⚠ 13	Power Sheet (8G)	AMR3708	33	•••••	
⚠ 14	Y Drive Sheet (428)	AMR3709	34	Pad (428 B-L)	AHA2668
⚠ 15	X Drive Sheet (428)	AMR3710	35	Pad (428 B-R)	AHA2669
⚠ 16	Address Gasket (42)	ANK1877	36	Pad (428 T-L)	AHA2670
NSP 17	Front Case Assy (428 service)	AMB3058	37	Pad (428 T-R)	AHA2671
18	Rear Case (428)	ANE1667	38	Under Carton (428)	AHD3586
NSP 19	Drive Voltage Label	ARW1097	39	Upper Carton (428 service)	AHD3641
20	Screw (3 x 40P)	ABA1332	40	Protect Sheet	AHG1331

10.9 TABLE TOP STAND (PDP-4280XA and PDP-4280XD ONLY)

A

B

C



(1) TABLE TOP STAND PARTS LIST

D

Mark No.	Description	Part No.
1	Base Cover Assy	See Contrast table (2)
2	Stand Pipe L Assy	See Contrast table (2)
3	Stand Pipe R Assy	See Contrast table (2)
4	Screw	ABA1357
5	Screw (M8 x 23)	ABA1371
6	Screw (M8 x 60)	ABA1372

E

(2) CONTRAST TABLE

PDP-4280XA/WYV5, WYVIXK5, PDP-4280XD/WYV5 and WYVIXK5 are constructed the same except for the following:

F

Mark	No.	Symbol and Description	PDP-4280XA /WYV5	PDP-4280XA /WYVIXK5	PDP-4280XD /WYV5	PDP-4280XD /WYVIXK5
	1	Base Cover Assy	AXY1195	AXY1174	AXY1195	AXY1174
	2	Stand Pipe L Assy	AXY1190	AXY1180	AXY1190	AXY1180
	3	Stand Pipe R Assy	AXY1191	AXY1181	AXY1191	AXY1181

Changed contents

Suffix	Applied Page or Title	Revision	Date
002	Coversheet	Deleted the description of the reference service manual.	June 22, 2007